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AMERICAN

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Alphabetical List of NEW PRODUCTS *Developed Since November, 1952*

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WITH the co-operation of manufacturers of dyestuffs, textile chemicals, and wet processing and laboratory equipment, we have prepared the accompanying list of products which, it is understood, have been placed on the market or further developed since November, 1952. The list of products has been subdivided according to the classifications mentioned and the individual products are listed in alphabetical order (except for equipment). The name of the manufacturer, in an abbreviated form, appears directly below the name of the product. In many cases the abbreviated name of the manufacturer will immediately indicate to the reader the full name of the company. However, below we have listed alphabetically the key name of the manufacturer together with the complete firm name and address.

We have tried to make this list as complete and accurate as possible but there may be some unintentional omissions or errors. If so, we shall be pleased to have such matters brought to our attention immediately. We have depended upon the manufacturers to supply us with a complete list of their new products together with information concerning them. The properties claimed for these products are those claimed by the manufacturers. The information which we publish is necessarily in a brief form inasmuch as lack of space prohibits the publication of complete details concerning any product. We hope, however, that the information as it appears is sufficiently comprehensive to give the reader a specific idea of the properties and intended uses of the product.

KEY TO MANUFACTURERS' NAMES

ALCO—Alco Oil & Chemical Corp, Trenton Ave and William St, Philadelphia 34, Pa

AMALGAMATED—Amalgamated Chemical Corp, Rorer and Ontario Sts, Philadelphia 34, Pa

AMERICAN ANILINE— American Aniline Products, Inc, 50 Union Square, New York 3, N Y

AMERICAN POLYMER—American Polymer Corp, 101 Foster St, Peabody, Mass

AMERICAN VISCOSE—American Viscose Corporation, Textile Chemicals Division, P O Box 455, Marcus Hook, Pa

ANTARA—Antara Chemicals Division, General Dyestuff Corporation, 435 Hudson St, New York 14, N Y

APEX—Apex Chemical Co, Inc, 225 West 34th St, New York 1, N Y

ARKANSAS—Arkansas Company, Inc, P O Box 210, Newark 1, N J

ARMOUR—Armour and Company, 1355 West 31st St, Chicago 9, Ill

ARNOLD, HOFFMAN—Arnold, Hoffman & Co, Inc, Providence, R I

ATLANTIC CHEMICAL—Atlantic Chemical Corporation, 153 Prospect St, Passaic, N J

AULA—Aula Chemicals, Inc, P O Box 494, 714 Division St, Elizabeth, N J

BAKER—J T Baker Chemical Co, Phillipsburg, N J

BASF—Badische Aniline & Soda Fabrik, AG, Ludwigshafen a Rhein, Germany (Distributed in this market by Nova Chemical Corporation, 147-153 Waverly Place, New York 14, N Y)

BECCO—Buffalo Electro-Chemical Company, Inc, Division of Food Machinery and Chemical Corporation, Station B, Buffalo 7, N Y

BECKMAN—Beckman Instruments, Inc, South Pasadena, Calif

BERG—Charles W Berg Laboratories, 1827-29 N Fifth St, Philadelphia 22, Pa

BERKSHIRE—Berkshire Color & Chemical Co, Pine and Cherry Sts, Delawanna, N J

BICK—Bick & Co, Inc, Reading, Pa

BIRCH—Birch Brothers, Inc, 32 Kent St, Somerville 43, Mass

BURKART-SCHIER—Burkart-Schier Chemical Company, Chattanooga, Tenn

CALCO—Calco Chemical Division, American Cyanamid Company, Bound Brook, N J

CARBIC—Carbic Color & Chemical Company, Inc, 451-453 Washington St, New York 13, N Y

CAROLINA—The Carolina Aniline & Extract Company, P O Box 2386, Charlotte 1, N C

CATALIN—Catalin Corporation of America, 1 Park Ave, New York 16, N Y

CHARLOTTE—Charlotte Chemical Laboratories, Inc, Charlotte 1, N C

CIBA—Ciba Company, Inc, 627 Greenwich St, New York 14, N Y

COLGATE-PALMOLIVE — Colgate-Palmolive Company, 105 Hudson St, Jersey City 2, N J

COLLOIDS—Colloids, Incorporated, 394-8 Frelinghuysen Ave, Newark 5, N J

COLTON—The Colton Chemical Company, 1545 East 18th St, Cleveland 14, O
CONTINENTAL—Continental Chemical Co, 195 Twenty-first Ave, Paterson, N J
CROWN—Crown Chemical Corporation, 240 India St, Providence 3, R I
CUSTOM SCIENTIFIC—Custom Scientific Instruments, Inc, 541-543 Devon St, Arlington, N J
DE PAUL—De Paul Chemical Company, Inc, 44-27 Purvis St, Long Island City 1, N Y
DECK—Textile Machine Makers Deck, Merkurstrasse 34, Zurich 7, Switzerland
DEXTER—Dexter Chemical Corporation, 819 Edgewater Road, New York 59, N Y
DOW CORNING — Dow Corning Corporation, Midland, Mich
Du PONT—E I du Pont de Nemours & Co, Inc, Wilmington, Del
EMERY—Emery Industries, Inc, Cincinnati 2, Ohio
EMKAY—Emkay Chemical Company, 319-325 Second St, Elizabeth, N J
FANCOURT—W F Fancourt Co, 516-518 South Delaware Ave, Philadelphia 47, Pa
FOXBORO—The Foxboro Company, Foxboro, Mass
FRITZSCHE—Fritzsche Brothers, Inc, 76 Ninth Ave, New York 11, N Y
GEIGY—Geigy Dyestuffs Division of Geigy Chemical Corporation, 89 Barclay St, New York 8, N Y
GENERAL DYESTUFF—General Dyestuff Corp, 435 Hudson St, New York 14, N Y
GENERAL PLASTICS—General Plastics Corporation, 165 Third Ave, Paterson 4, N J
GLYCO—Glyco Products Co, Inc, 26 Court St, Brooklyn 2, N Y
GOODRICH—B F Goodrich Chemical Company, Rose Bldg, 2060 E Ninth St, Cleveland 15, O
GOODYEAR—The Goodyear Tire & Rubber Company, Inc, Akron 16, O
HART—The Hart Products Corporation, 1440 Broadway, New York 18, N Y
HILTON-DAVIS — The Hilton-Davis Chemical Co Div, 2235 Langdon Farm Road, Cincinnati 13, O
HONEYWELL — Industrial Division, Minneapolis-Honeywell Regulator Co, Philadelphia, Pa
HUNTER—James Hunter Machine Co, North Adams, Mass
HUYCK—T C Huyck & Sons, Rensselaer, N Y
IMPERIAL—Imperial Paper and Color Corporation, Pigment Color Division, Glens Falls, N Y
INSTRUMENT DEVELOPMENT—Instrument Development Laboratories, Inc, 163 Highland Ave, Needham Heights 94, Mass
INTERCHEMICAL — Interchemical Corporation, Textile Colors Division, Hawthorne, N J
JORDAN—W H & F Jordan, Jr, Manufacturing Company, 2126 East Somerset St, Philadelphia 34, Pa
KALI—Kali Manufacturing Co, 427 Moyer St, Philadelphia 25, Pa
KOPPERS—Koppers Company, Inc, Pittsburgh 19, Pa
LAUREL — Laurel Soap Manufacturing Co, Inc, Tioga, Thompson and Almond Sts, Philadelphia 34, Pa
LUNKENHEIMER—The Lunkenheimer Co, Cincinnati, O
MAY—Otto B May, Inc, 52 Amsterdam St, Newark 5, N J
METRO-ATLANTIC—Metro-Atlantic, Inc, Centredale 11, R I
METRO DYESTUFF — Metro Dyestuff Corporation, 101 Quidnick St, West Warwick, R I
MICHEL—M Michel and Company, Inc, 90 Broad Street, New York 4, N Y
MICO—Mico Instruments Company, 83-S Trowbridge St, Cambridge 38, Mass
MONA—Mona Industries, Inc, 65-75 E 23rd St, Paterson 4, N J
MONSANTO — Monsanto Chemical Company, Merrimac Division, Everett Station, Boston 49, Mass
NATIONAL—National Aniline Division, Allied Chemical & Dye Corporation, 40 Rector St, New York 6, N Y
NAUGATUCK—Naugatuck Chemical, Naugatuck, Conn
NOPCO—Nopco Chemical Company, Inc, Harrison, N J
NUODEX—Nuodex Products Co, Inc, Elizabeth, N J
NYANZA—Nyanza Color & Chemical Co, Inc, 109 Worth St, New York 13, N Y
ONYX—Onyx Oil & Chemical Co, Warren & Morris Sts, Jersey City 2, N J
ORGANIC—Organic Chemical Corporation, P O Box 432, Providence 1, R I
ORONITE—Oronite Chemical Company, 38 Sansone St, San Francisco 4, Calif
PAISLEY—Paisley Products Inc Division of Morningstar, Nicol, Inc, 1770 Canalport Ave, Chicago 16, Ill
PFIZER—Chas Pfizer & Co, Inc, 630 Flushing Ave, Brooklyn 6, N Y
PHARMA—Pharma Chemical Corporation, 175 Fifth Ave, New York 10, N Y
PROCTER & GAMBLE—The Procter & Gamble Company, M A & R Bldg, Ivorydale, Cincinnati 17, O
QUAKER—Quaker Chemical Products Corp, Conshohocken, Pa
REFINED—Refined Products Corporation, 624-634 Schuyler Ave, Lyndhurst, N J
RICHMOND—Richmond Oil, Soap & Chemical Co, Inc, 1041-1043 Frankford Ave, Philadelphia 25, Pa
ROBINSON—Robinson Clay Product Company, Akron, O
RODNEY HUNT—Rodney Hunt Machine Co, Orange, Mass
ROHM & HAAS—Rohm & Haas Company, Washington Square, Philadelphia 5, Pa
RUMFORD—The Rumford Company, Rumford 16, R I
SANDOZ—Sandoz Chemical Works, Inc, 61-63 Van Dam St, New York 13, N Y
SINDAR—Sindar Corporation, 330 West 42nd St, New York 36, N Y
SCOTT—Scott Testers, Inc, 63 Blackstone St, Providence 1, R I
SMITH, DRUM—Smith, Drum & Company, 432 West Allegheny Ave, Philadelphia 33, Pa
SONNEBORN—L Sonneborn Sons, Inc, 300 Fourth Ave, New York 10, N Y
SOU-TEX—Sou-Tex Chemical Company, Summey Bldg, Mount Holly, N C
STANDARD CHEMICAL—Standard Chemical Products, Inc, Hoboken, N J
SOLUOL—Soluol Chemical Co, Inc, Green Hill and Market Sts, Natick, R I
TANATEX—The Tanatex Corporation, 516 Fifth Ave, New York 36, N Y
TEX-CHEM—Tex-Chem Company, 20-21 Wagaraw Road, Fair Lawn, N J
TENSITRON—Tensitron, Inc, Harvard, Mass
TUBE-TEX—Tubular Textile Machinery Corporation, 33-61 54th St, Woodside, L I, N Y
ULTRA VIOLET—Ultra Violet Products, Inc, 145 Pasadena Ave, South Pasadena, Calif
WARWICK—Warwick Chemical Company, Division Sun Chemical Corporation, 10th St and 44th Ave, Long Island City 1, N Y
WICA—Wica Chemicals, Inc, P O Box 506, Charlotte, N C
WYANDOTTE—Wyandotte Chemicals Corporation, Wyandotte, Mich.
YORKSHIRE—Yorkshire Dyeware and Chemical Company, Leeds, England. Sole agents in U S A: American Dyewood Company, Main and Joralemon Sts, Belleville 9, N J

AHCOVAT BROWN 4R DOUBLE PASTE AND AHCOVAT BROWN 4R DOUBLE PASTE FOR PRINTING

(Arnold, Hoffman)

A new anthraquinone vat dye. It is stated that it will not tender cellulosic materials due to exposure to sunlight and that it has very good lightfastness, even in pale shades. The dyeing type is suitable for all types of application including continuous high temperature methods. Ahcovat Brown 4R Double Paste for Printing is said to possess excellent printing properties and is not unduly affected by variations in steaming conditions or in concentrations of reduction chemicals.

AHCOVAT FLAVONE GCN PASTE
AHCOVAT FLAVONE GCN DOUBLE POWDER

(Arnold, Hoffman)

A new improved type, said to be excellent for dyeing on circulating machines due to its high dispersibility and the lack of large particles. Brighter dyeings are possible due to the exceptionally clean pigment.

AHCOVAT ORANGE RRT PASTE
AHCOVAT DARK BLUE BO PASTE
AHCOVAT NAVY BLUE BR DOUBLE PASTE
AHCOVAT BLUE BCF DOUBLE PASTE
AHCOVAT BROWN AR DOUBLE PASTE
AHCOVAT GOLDEN ORANGE 3G PASTE
AHCOVAT BROWN AG DOUBLE PASTE
AHCOVAT BLACK BN DOUBLE PASTE

(Arnold, Hoffman)

These dyes are new additions to Arnold, Hoffman's range of vat dyes.

AHCOVAT SOLUBLE BRILLIANT VIOLET I4R PDR

(Arnold, Hoffman)

A brilliant red-violet soluble vat, suitable for application by dyeing and printing. It is said to possess excellent tinctorial value and exceptionally high fastness properties. Capable of producing level dyeings, even in pale shades.

ALIZARINE CYANINE GREEN CGN EX

(Nyanza)

A neutral dyeing type brighter in shade than the old Alizarine Cyanine Green CG Ex. Alizarine Cyanine Green CGN Ex is said to have the same good fastness to light and good solubility. It is also suitable for shading chrome colors and the shade stands the usual topchrome dyeing method. Alizarine Cyanine Green CGN Ex is recommended by the manufacturers for dyeing shades of green on union fabrics which require good fastness to light.

ALIZARINE LIGHT BLUE FG

(Sandoz)

A new addition to Sandoz' line of level-dyeing acid blues and one of the brightest. Reported to be outstanding for leveling or migration and of particular value for dyeing of carpet and knitting yarns. Dyers of carpet yarns are being advised of the excellent fastness of this color to urine spotting, and its stability of shade in artificial light and without loss of brilliancy.

ALIZARINE LIGHT BLUE HR

(Sandoz)

The manufacturer reports this to be the first major improvement in level dyeing acid blues since Sandoz discovered Alizarine Light Blue 4GL. The new brand has the same excellent dyeing properties of the 4GL type but snows marked improvement in fastness to light and somewhat better fastness to perspiration. The improved light fastness of Alizarine Light Blue HR stems from its slower but on-tone fading, whereas practically all other blues are said to turn grey or greener after short exposure. Alizarine Light Blue HR, being a redder shade, will prove much more productive than most of the available blues which are on the green cast. It is stated that its excellent fastness to carbonizing, water spotting and hot pressing recommends its use on high grade dress and coating fabrics. It is also being recommended by Sandoz as an outstanding color for the dyeing of wool or fur hat bodies where its excellent level dyeing, good penetration and light fastness is of prime importance. Dyers of high grade carpet yarns will appreciate its superior light fastness.

AMACEL* BLUE BNN

(American Aniline)

Excellence of dispersion, solubility and shade build-up plus fine levelling quality and fast pick up are said to mark this anthraquinone-derived product. The color is absorbed well at low and high dyeing temperatures to produce bright, neutral toned blues on acetate rayon while on nylon a somewhat greener shade is obtained. This dyestuff offers ease of application as well as economy in box or jig equipment. It is stated that good to very good wash and light fastness may be expected in medium to heavy self shades as well as of the base color for the production of modes and navies.

* Reg U S Pat Off

AMACEL* SCARLET III — NEW

(American Aniline)

A new manufacture of an established item which is highly dispersed and recommended by the manufacturer for application printing on acetate rayon with good fastness to sublimation. The color levels well and is suited to use in box or jig for the production of peach, tangerine and other mode shades as well as deep scarlet self shades on acetate and nylon. The color discharges and is said to offer better than average all around fastness.

* Reg U S Pat Off

AMANIL* FAST VIOLET 4BL

(American Aniline)

A homogeneous direct-dyeing color which produces rich, brilliant shades of blue-violet on rayon, cotton and other cellulosic fibers. A valuable addition to the AAP line of fast to light direct colors. In medium shade depths, light fastness is said to be very good on cotton and excellent on rayon. Urea-formaldehyde resin treatments have comparatively little effect on color as to shade change; however its superior light fastness is somewhat lowered. Wash and perspiration fastness is improved and quite good after resin finishing.

* Reg U S Pat Off

AMANIL* SUPRA BLACK FL CONC

(American Aniline)

Rich blue blacks and blue-toned greys said to be of exceptional wash fastness are obtained on rayons as after-treated with U-F resins and copper complex finishes. The product levels well and is suitable for acetate reserve.

* Reg U S Pat Off

AMANIL* SUPRA BROWN LBL

(American Aniline)

A homogeneous, direct dyeing, full bodied brown with slightly yellowish cast for cotton and rayon. The color is dischargeable, is said to have very good lightfastness and is particularly recommended by the manufacturers for rayon piece goods which are to be crease-proofed. As is normal with the Amanil Supra group, wash and wet fastness in general are materially improved when the goods are subjected to resin finishing.

* Reg U S Pat Off

AMANIL* SUPRA ORANGE RLL

(American Aniline)

A direct dyeing orange which holds its clear, yellowish tone when resin finished as well as copper-complex treated. The color is said to offer good lightfastness together with very good resistance to the AATCC #2 wash test. The resistance is even further improved when the fabric is resin treated.

* Reg U S Pat Off

AMANIL* SUPRA YELLOW LRL

(American Aniline)

To an expanding line of "Amanil Supra Colors," the maker adds this important direct dyeing yellow. This new product, along with others in its group, was especially developed for use on cottons and rayons which are to be resin finished with a minimum of shade change. It is stated that discharge is excellent, lightfastness very good and washing, water and perspiration fastness ratings high and appreciably improved with resin treatments.

* Reg U S Pat Off

AMANTHOSOL* BROWN IBR

(American Aniline)

The stabilized, water-soluble leuco ester of Amanthrene Brown BR-Pr #118. Like its parent vat color, this "soluble vat" produces full, reddish browns in its deeper shades down to pastel mode tones said to be of high resistance to light, washing, chlorine, soda boil, etc. The color is applicable to cotton, viscose, etc, by the normal dyeing and printing procedures. It is stated that it is an important item for the dyeing of wool in browns, tans and beige combinations where excellence in light and fulling fastness is requisite.

* Reg U S Pat Off

AMANTHOSOL* GOLDEN YELLOW IGK

(American Aniline)

The water-soluble, stabilized leuco ester of Amanthrene Golden Yellow GK. Of anthraquinone derivation, the color offers the same fastness properties as are obtained with its parent product — Pr #291. This "soluble vat" may be printed and dyed in bright, golden yellows on cotton, viscose and silk and is of much interest for the dyeing of fast shades on wool.

* Reg U S Pat Off

ANTHRALAN VIOLET 4BF

(General Dyestuff)

A straight, bluish-violet, acid dyestuff, which is claimed to be unusual in combining excellent (7) light fastness with very good brightness and very good leveling properties for wool. It may also be employed for clear shades on silk. Very good resistance to chroming is said to permit use of this dyestuff for brightening chrome dyeings when the limitation of its fairly good resistance to washing and fulling is taken into account. Good affinity from a neutral bath also suggests use of this product as a brightening component for the new neutral-dyeing metallized dyestuffs. Anthralan Violet 4BF is recommended also for dyeing silk and for printing wool and silk when brightness and light fastness are required.

AQUABOND* PIGMENT PRINTING COLORS

(Interchemical)

Aquabond Pigment Printing Colors are Interchemical's new series of resin-bonded pigment colors. These new colors are employed for fast-color printing cotton, rayon, nylon, acetate, and other fabrics. Although Aquabond Colors can be used in the form of aqueous dispersions, at present they are generally applied in the form of oil-in-water emulsions. They supplement Interchemical's Aridye® 400 Series Pigment Colors which are applied in the form of pigmented water-in-oil emulsions. Like Aridye Colors, the new Aquabond Colors provide a wide range of shades said to possess excellent all-round fastness properties. They are suitable for machine printing on conventional types of equipment. Specific advantages of the Aquabond Colors include exceptionally sharp marks and smooth blotches. It is stated that these new colors have excellent linting qualities. Because they are water dispersible, Aquabond Colors facilitate cleaning of print rollers, furnishers, backgreys, blankets, and other equipment.

Aquabond Colors can be employed alone or alongside Aridye Colors, Arigen® Dyes (Interchemical's stabilized azoic dyes), and other classes of soluble dyes to provide a wide variety of color combinations. When Aquabond Colors

* Trademark

See pages 809-810 for manufacturer's addresses

are used alone or alongside Aridye Colors, the fabric, after printing and drying, is merely heat cured to polymerize the synthetic resins used as bonding agents for the pigments. When used in conjunction with Arigen Dyes or other soluble dyes, the fabric, after being printed, is subjected to the same type of aftertreatment normally employed for those dyes.

Aquabond Colors are prepared for application by the oil-in-water emulsion system simply by mixing the required amounts of concentrated colors into an Aquabond Cut Clear to provide the desired depth of shade. Mixing is carried out with the aid of a high-speed mixer. Aquabond Clears are offered in concentrated form and are cut as they are needed in the printing plant. Printing is carried out in the usual manner, no change in the usual set-up of machines being necessary. The colors as printed are final in shade, permitting the printer to detect and correct any defects immediately and to keep the pattern in fit throughout a run.

Prints produced with Aquabond Colors are said to be characterized by their brilliancy of shade and high degree of fastness to washing, drycleaning, and crocking. Because the prints do not bleed when washed, discoloration of white grounds is avoided. Selected colors in the series are said to have exceptional fastness to light, making them particularly desirable for printing drapery fabrics. Aquabond Colors also provide excellent resistance to caustic cut out in plissé work.

The principal Aquabond Colors include the following; others will be available soon:

AQUABOND WHITE I
AQUABOND BLACK K
AQUABOND SCARLET Y
AQUABOND RED B
AQUABOND RED R
AQUABOND RUBINE 3B
AQUABOND GREEN B
AQUABOND VIOLET 3R
AQUABOND BLUE 2G
AQUABOND BLUE 2R
AQUABOND ORANGE O
AQUABOND YELLOW 2G
AQUABOND YELLOW K
AQUABOND YELLOW R

ARIDYE® NYLON CRINKLE COLORS AND CLEARS

(Interchemical)

Aridye Nylon Crinkle Colors and Clears are Interchemical's new series of products for use in the simultaneous printing and crinkling or plisséing of nylon fabrics. These newly developed pigment colors and clears are applied in the form of water-in-oil emulsions to which phenol has been added. The amount of phenol employed can be varied to produce the desired degree of crinkle or plissé on various weights and constructions of nylon fabrics; the crinkle or plissé effect is said to be permanent, withstanding repeated washings. The new Aridye Nylon Crinkle Colors are supplied in concentrated form and are reduced to the proper strength for printing by mixing them into a cut clear previously prepared by mixing the special Aridye Nylon Crinkle Clears with liquid phenol and an organic solvent. Printing and crinkling are carried out on a conventional printing machine, preferably with a fairly deep engraving on the print roller. After printing, the fabric is dried without tension in a flue drier or a conveyor type drier, cured for 3 minutes at 280 to 300° F, slop washed in a dilute solution of soda ash to neutralize any phenol which has not volatilized during curing, rinsed well, and again flue dried. During washing, the fabric can be tested with phenolphthalein to determine when removal of the phenol is complete. Tension on the fabrics should be avoided during drying, curing, and washing. The special Aridye Nylon Crinkle Clears can also be employed for colorless nylon crinkle printing. In addition, these clears can be used in conjunction with aluminum and bronze powders for producing metallic crinkle or plissé effects on nylon. For printing white-on-white crinkle effects, a non-yellowing resin-bonded pigment white, known as Aridye White NY, can be used. The principal Aridye Nylon Crinkle Colors and Clears include the following:

ARIDYE NYLON CRINKLE BLACK
ARIDYE NYLON CRINKLE RED
ARIDYE NYLON CRINKLE RED R
ARIDYE NYLON CRINKLE RUBINE
ARIDYE NYLON CRINKLE GREEN
ARIDYE NYLON CRINKLE VIOLET
ARIDYE NYLON CRINKLE BLUE
ARIDYE NYLON CRINKLE NAVY
ARIDYE NYLON CRINKLE YELLOW
ARIDYE NYLON CRINKLE CLEAR 6237
ARIDYE NYLON CRINKLE CLEAR 6238

ARIDYE® ROYAL BLUE FCR

(Interchemical)

Aridye Royal Blue FCR is a new resin-bonded pigment color developed specifically for the fast-color printing of cotton, rayon, nylon, acetate, and other natural and synthetic fibers. Prints produced with this color are said to be characterized by their brilliancy of shade and outstanding fastness to light, washing, drycleaning, and crocking for an ultramarine blue. Aridye Royal Blue FCR has excellent running properties. Left-over color cuts remain stable for prolonged periods of time.

ARIDYE® YELLOW FY2R

(Interchemical)

Aridye Yellow FY2R is a new addition to Interchemical's line of Aridye Pigment Printing Colors. This new resin-bonded pigment color was formulated specifically for printing cotton, rayon, acetate, nylon, and other natural and synthetic fibers. Prints produced with Aridye Yellow FY2R are said to be characterized by their bright golden yellow shades possessing excellent fastness to light, washing, and crocking.

ARIGEN® BLUE B PASTE

(Interchemical)

Arigen Blue B Paste is the latest addition to Interchemical's stabilized azoic dyes for the fast-color printing of cotton, spun rayon, and other fabrics. This new dye is offered in the form of an emulsion of a paste-like consistency. It was developed specifically for application by Interchemical's exclusive Aquadye® Emulsion method. It can, however, be applied in conventional gum thickeners. Major advantages of Arigen Blue B Paste when applied in Aquadye Emulsions are said to include: better hand, sharper marks, smoother blotches, and ease of application. Arigen Blue B Paste is useful also for printing alongside Aridye® Pigment Colors, enabling the printer to obtain color combinations not otherwise readily or economically obtainable.

ATLANTIC PRINTING BLACK 2B POWDER (Patent Pending)

(Atlantic Chemical)

A new stabilized azoic dyestuff especially recommended by the manufacturers for the printing of intense blacks on cotton, rayon and linen, either in fine line or blotches by acid or neutral aging methods. Shades printed with this dyestuff are said to exhibit very good lightfastness, excellent washfastness and unusually high crockfastness. This black may be printed alongside azoics as well as pigments and soluble vats.

ATLANTIC PRINTING BROWN IPT POWDER
ATLANTIC PRINTING BROWN IB POWDER
ATLANTIC PRINTING BLACK BROWN IT POWDER

(Atlantic Chemical)

Stabilized azoics which are said to possess exceptional lightfastness and washfastness. The Brown IPT and Black Brown IT are well suited for plissé work.

ATLANTIC PRINTING GREY R POWDER

(Atlantic Chemical)

A new stabilized azoic dyestuff used by either acid or neutral aging methods to produce lightfast, wash-fast grey shades. This product may be printed alongside other stabilized azoics, pigments and soluble vats.

ATLANTIC RESIN FAST BLUE L3G
ATLANTIC RESIN FAST BLUE LBL
ATLANTIC RESIN FAST BLUE LBR
ATLANTIC RESIN FAST BLUE LBG

(Atlantic Chemical)

New homogeneous direct dyestuffs said to possess excellent lightfastness before and after resin or crease-proof finishing with either U-F or melamine combinations. These dyestuffs are rendered fast to washing by all of the commonly used "fixing" agents. Although containing copper complexes, these dyestuffs are distinguished by their low cost.

AULABRITE* COLORS

(Aula)

The following series of pigment printing colors are recommended by the manufacturers for machine or screen printing when diluted with Aulabrite Extender. They are suitable for printing on cotton, rayon, Fiberglas, and synthetic fabrics and may be co-printed with dyes. The printed fabrics are customarily can-dried or loop-dried and set either by curing for 3 minutes at 300° F or by acid aging or steam aging.

* Registered Trade Mark

AULABRITE* BLACK 7111

(Aula)

Carbon black pigment of a brown-black cast dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent light fastness properties.

* Registered Trade Mark

AULABRITE* BLACK 7112

(Aula)

Carbon black pigment of a bluish-black cast dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent light fastness properties.

* Registered Trade Mark

AULABRITE* BLACK 7121

(Aula)

Carbon black pigment of a brown-black cast dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent light fastness properties.

* Registered Trade Mark

AULABRITE* BLUE 7211

(Aula)

Phthalocyanine blue pigment of a reddish cast dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent light fastness properties.

* Registered Trade Mark

AULABRITE* BLUE 7231

(Aula)

Phthalocyanine blue pigment of a greenish cast dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent light fastness properties.

* Registered Trade Mark

AULABRITE* BLUE, AQUA 7251

(Aula)

Phthalocyanine blue pigments dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent light fastness properties.

* Registered Trade Mark

AULABRITE* BLUE, ROYAL 7221

(Aula)

Brilliant reddish blue pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent light fastness properties.

* Registered Trade Mark

AULABRITE* BLUE, NAVY 7241

(Aula)

A deep shade red-blue pigment dispersed in

* Registered Trade Mark

See pages 809-810 for manufacturer's addresses

an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades and to have good light fastness properties.

AULABRITE* BROWN 7311

(Aula)

A dark reddish brown pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades and to have good light fastness properties.

* Registered Trade Mark

AULABRITE* BROWN 7321

(Aula)

An inorganic brown pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock resistant even in deep shades, and to have excellent light fastness properties.

* Registered Trade Mark

AULABRITE* BROWN 7331

(Aula)

A brilliant red-brown pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have good light fastness properties.

Registered Trade Mark

AULABRITE* BROWN 7341

(Aula)

A brilliant orange-brown pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have good light fastness properties.

* Registered Trade Mark

AULABRITE* GRAY 7131

(Aula)

Carbon black pigment of a brown-gray cast dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent light fastness properties.

* Registered Trade Mark

AULABRITE* GRAY 7141

(Aula)

Carbon black pigment of a blue-gray cast dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent light fastness properties.

* Registered Trade Mark

AULABRITE* GREEN 7411

(Aula)

A brilliant phthalocyanine green pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent light fastness properties.

* Registered Trade Mark

AULABRITE* GREEN 7421

(Aula)

A deep shade yellow-green pigment dispersed in an oil-in-water emulsion of a polyester resin, particularly suitable for the preparation of leaf green prints. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have good light fastness properties.

* Registered Trade Mark

AULABRITE* GREEN 7431

(Aula)

A brilliant bluish-green phthalocyanine pigment dispersed in an oil-in-water emulsion of a polyester resin, particularly suitable for the preparation of aqua shade colors. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent light fastness properties.

* Registered Trade Mark

AULABRITE* ORANGE 7511

(Aula)

A brilliant inorganic orange pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent light fastness properties.

* Registered Trade Mark

AULABRITE* ORANGE 7521

(Aula)

A brilliant inorganic orange pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent light fastness properties.

* Registered Trade Mark

AULABRITE* ORANGE 7531

(Aula)

A brilliant orange pigment with a reddish cast dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have fair light fastness properties.

* Registered Trade Mark

AULABRITE* ORANGE 7541

(Aula)

A brilliant orange pigment with a yellow cast dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have fair ligiht fastness properties.

* Registered Trade Mark

AULABRITE* RED 7611

(Aula)

A brilliant red pigment of a bluish cast dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have fair light fastness in dense shades.

* Registered Trade Mark

AULABRITE* RED 7621

(Aula)

A brilliant red pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and also to dry cleaning in most dry cleaning fluids and to have fair light fastness properties.

* Registered Trade Mark

AULABRITE* RED 7671

(Aula)

An inorganic red pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent light fastness properties.

* Registered Trade Mark

AULABRITE* RED-PINK 7631

(Aula)

A brilliant red-pink pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent light fastness properties.

* Registered Trade Mark

AULABRITE* RED VIOLET B 7711

(Aula)

A brilliant red-violet pigment of a bluish cast dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have good light fastness properties.

* Registered Trade Mark

AULABRITE* RED VIOLET R 7721

(Aula)

A brilliant red-violet pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have good lightfastness properties.

* Registered Trade Mark

AULABRITE* SCARLET 7641

(Aula)

A brilliant scarlet pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing, to be crock-resistant even in deep shades, and to have good lightfastness properties.

* Registered Trade Mark

AULABRITE* SCARLET 7651

(Aula)

A brilliant scarlet pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing, to have good dry cleaning properties, to be crock-resistant even in deep shades, and to have fair lightfastness properties.

* Registered Trade Mark

AULABRITE* SCARLET 7661

(Aula)

An inorganic scarlet pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent lightfastness properties.

* Registered Trade Mark

AULABRITE* VIOLET 7731

(Aula)

A brilliant violet pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent lightfastness properties.

* Registered Trade Mark

AULABRITE* WHITES 7811, 7812, 7821, 7822, 7823, and 7824

(Aula)

A brilliant white titanium dioxide pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant, and to have excellent lightfastness properties.

* Registered Trade Mark

AULABRITE* YELLOW 7911

(Aula)

A brilliant inorganic yellow pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades and to have excellent lightfastness properties.

* Registered Trade Mark

AULABRITE* YELLOW 7921

(Aula)

A brilliant inorganic yellow pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent lightfastness properties.

* Registered Trade Mark

AULABRITE* YELLOW 7931

(Aula)

A brilliant inorganic yellow pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent lightfastness properties.

* Registered Trade Mark

AULABRITE* YELLOW 7941

(Aula)

A dull inorganic ochre pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent lightfastness properties.

* Registered Trade Mark

AULABRITE* YELLOW 7951

(Aula)

A yellow pigment of a greenish cast dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have excellent lightfastness properties.

* Registered Trade Mark

AULABRITE* YELLOW 7961

(Aula)

A brilliant yellow pigment dispersed in an oil-in-water emulsion of a polyester resin. The prints are said to be fast to washing and dry cleaning, to be crock-resistant even in deep shades, and to have fair lightfastness properties.

* Registered Trade Mark

AZOSOL FAST BLUE HLR

(General Dyestuff)

A straight, bright, greenish-blue, spirit-soluble dyestuff, which is said to be distinctly redder, about 25% stronger and distinctly more soluble in ketones than Azosol Fast Blue HLD. It is claimed to be practically insoluble in water but to dissolve readily in the lower alcohols (particularly methanol and ethanol), Cellosolve, Carbitol, and ketones. It is especially recommended for use in nitrocellulose and vinyl-lacquer coatings, in which it is reputed to display very good light fastness. It is also recommended for use in spirit stains, aniline inks, and inks for ball-point pens. By combination with 30% as much Azosol Fast Yellow CGR a green is produced, which is equal in shade, strength and light fastness to Azosol Fast Green HLA.

BIXAMINE* DARK GREEN WS

(Bick)

A direct color which produces full shades of dark green on rayon and cotton in all stages of its manufacture. It is said to be very soluble and level dyeing. These properties warrant its use for dyeing rayon or cotton on the jig. It is also used in combination with Bixamine Black GX or JB to obtain greenish shades of black. It is said to possess good fastness to acids, crocking, stoving, hot moist pressing, perspiration, steaming and washing at 120° to 160° F.

* Registered Trade Mark

BIXAMINE* DIAZO BLUE NA

(Bick)

A direct diazo navy which is said to produce a fast navy blue shade on rayon or cotton when diazotized and developed in the usual manner with beta naphthol. It is stated that the solubility is excellent and the dyeing properties are very good on all types of dyeing equipment for cotton and rayon.

* Registered Trade Mark

BIXAMINE* DIAZO ORANGE 2R

(Bick)

A developed dyestuff which when diazotized and coupled to beta naphthol produces a neutral shade of orange on cotton and rayon. The light and wash fastness properties are said to warrant the use of this color in various stages of cotton manufacture. It is well adapted for the printing trade as the color discharges to a clear white.

* Registered Trade Mark

BIXAMINE* FAST BLUE 2BRN

(Bick)

Recommended by the manufacturers for the production of brilliant navy blues on cotton and rayon which require excellent lightfastness. It is said to be especially suitable for use with crease-resistant finishes, where its fastness to light remains unaffected. It can be used alone or in combination with other fast-to-light direct colors for producing mode shades on draperies, upholstery and wearing apparel.

* Registered Trade Mark

BIXAMINE* FAST BLUE F2RL CONC 175%

(Bick)

A reddish fast-to-light blue said to be of very good fastness to light, producing brilliant shades on cotton and rayon. The dyestuff can be recommended for dyeing draperies and upholstery fabrics. Fastness to washing is moderate, but the dyestuff is said to be resistant to dry cleaning. Acetate is left white, when properly applied. Wool is left much lighter than the cellulose fiber in unions. The dystuff discharges white, both alkaline and neutral.

* Registered Trade Mark

BIXAMINE* FAST BORDEAUX 2BL

(Bick)

A direct dyestuff said to have unusual resistance to light. It is further said to possess good fastness to mild washing, perspiration, crocking and dry cleaning. It has very good level dyeing properties and produces shades of bordeaux and wine.

* Registered Trade Mark

BIXAMINE* FAST BROWN GLL

(Bick)

A direct dyestuff having express affinity for cotton and rayon. It is said to be very fast to light, to possess good fastness to mild washing, perspiration and dry cleaning and to produce shades of tan and pastel brown.

* Registered Trade Mark

BIXAMINE* FAST ORANGE EGL

(Bick)

Recommended by the manufacturers as a fast-to-light orange on cotton and rayon. The dyestuff dyes very level and possesses excellent solubility. It is stated that fastness properties to washing, perspiration, crocking and pressing are good. The dyestuff is suitable in combination for browns, grays and mode shades, as well as self shades. Acetate effects are left white. In wool-cotton unions the wool is left practically white. Bixamine Orange EGL is not suitable for white discharge.

* Registered Trade Mark

BIXAMINE* FAST RUBINE B

(Bick)

A direct dyestuff with fair lightfastness properties. It is said to be valuable as a shading color in combination with other fast-to-light dyestuffs. Bixamine Fast Rubine B also is said to possess good fastness to perspiration and hot pressing. Its affinity for cotton and rayon is excellent and it is adaptable to discharge printing.

* Registered Trade Mark

BIXAMINE* FAST SCARLET 4BKA

(Bick)

A direct dyestuff which has express affinity for cotton. It is said to be particularly fast to acid, washing and perspiration. It is claimed that its excellent solubility and level dyeing properties warrant its use in all types of dyeing equipment.

* Registered Trade Mark

BIXOLAN* VIOLET 5RN

(Bick)

An acid color which contains chromium in the dyestuff and therefore is claimed to approach the fastness properties of chrome colors. It is satisfactory for dyeing piece goods containing different grades of wool or carbonized material. Excellent results are said to be obtained on loose wool slubbing, knitting and carpet yarn.

* Registered Trade Mark

BRILLIANT ALIZARINE MILLING RED

FBL Pat

(Sandoz)

Sandoz refers to this new product as a "companion color" to their recently announced Brilliant Alizarine Milling Violet FBL Pat. The new red is reported outstanding, in that it has the brilliancy of their Alizarine Light Red R, but with better light fastness, plus extreme fastness to fulling. Like the Brilliant Alizarine Milling Viclet FBL, it works well with their Lanasyn, Metomega Chrome and Xylene Fast "P" colors. Its fastness properties parallel the high ratings given on the earlier Violet FBL.

BRILLIANT ALIZARINE MILLING VIOLET FBL Pat

(Sandoz)

The manufacturer claims this to be the first acid violet to combine brilliancy with excellent fastness to light and fulling. It also is reported to have top fastness to carbonizing, decatizing, chlorination, stoving, washing, perspiration and sea water. They also recommend it in combination with their Lanasyn, Metomega Chrome or Xylene Fast "P" colors. Its good dyeing properties by the various methods lends its use on yarn, piece goods, top or raw stock.

CALCO ANILINE SALT

(Calco)

This product is recommended by the manufacturers for aniline black printing. It is considered to be a new product because a new process for its manufacture has been developed which produces aniline salt which is free from grit or any contamination and has a controlled pH within narrow limits best suited to cotton printing. It is produced in uniform small white crystals with controlled moisture content which means that it goes into solution more rapidly and completely. It is particularly recommended by the manufacturers for modern printing processes which, because of their high speed, require an improved aniline salt.

CALCO NAPHTHOSOL AS DOUBLE SOLUTION
CALCO NAPHTHOSOL SWF DOUBLE SOLUTION
CALCO NAPHTHOSOL OL DOUBLE SOLUTION
CALCO NAPHTHOSOL D DOUBLE SOLUTION
CALCO NAPHTHOSOL ASP DOUBLE SOLUTION
CALCO NAPHTHOSOL BS SINGLE SOLUTION

(Calco)

These products are new nonevaporating solutions of naphthols and work very well for all naphthol prepares as well as in dyeing and printing. A particular feature is their nondrying characteristic which eliminates flaking on the sides of an open drum, an undesirable feature of some of the previously available naphthol solutions. The use of Calco Naphthosol solutions is said to eliminate the need of dissolving the powder naphthols which requires a certain amount of skill and supervision. The Calco Naphthosol solutions are further said to save time and labor and simplify the task of obtaining uniform padding liquors from batch to batch.

CALCO SOLUBLE VAT JADE GREEN

(Calco)

This product is the soluble leuco ester form of Calcosol Jade Green NP Double Paste which is widely used for printing. The fastness properties are similar to those of the parent vat dye and it works well in combination with other soluble vat dyes. It is recommended by the manufacturers for printing or dyeing cotton or viscose and is also recommended for dyeing wool.

CALCO SOLUBLE VAT YELLOW GC

(Calco)

This new product is the soluble leuco ester form of Calcoloid Yellow GCD Paste which is widely known as one of the brightest and greenest vat yellows available for printing or dyeing. It is a versatile printing color suitable for roller or screen printing alongside azoics, pigments or other soluble vats where acid aging is used. For dyeing cotton, it is especially recommended for pastel shades where a bright, greenish yel-

low dye is required. It is said to have excellent levelling and penetrating powers which produce an attractive, solid surface appearance even on tightly-woven, difficult to dye fabrics. It is also applicable to wool.

CALCODUR RESIN FAST BLUE R

(Calco)

This new direct dye is said to be characterized by good fastness to light after resin treatment. It is said to produce good lightfastness and good washfastness properties as self shades on cotton and viscose. It dyes levelly and gives good penetration over a wide range of temperatures but produces its maximum strength and exhausts best when dyed at a boil. It is also suitable as a ground for discharge printing in light and medium shades. It is also recommended by the manufacturers for plissé work.

CALCODOUR RESIN FAST BLUE 6G

(Calco)

This direct dye is said to be characterized by good fastness to light after resin treatment. It also is said to be very good in lightfastness and to have good washfastness properties as a self shade on cotton and viscose. It should prove to be satisfactory for use in white thread effect dyeings since acetate rayon is left white when dyed by the usual procedures. The wash fastness is unchanged by resin treatment. It dyes levelly and gives good penetration over a wide range of temperatures but exhausts best and produces its maximum strength when dyed at 180° F.

CALCODUR RESIN FAST BROWN G

(Calco)

This direct dye is said to fill the need for a resin fast brown with good lightfastness at low concentrations and a pleasing brown shade which will remain on tone from light to medium depths. The outstanding characteristic is said to be its good fastness to light after resin treatment even at the low concentrations necessary to produce tan shades. After resin treatment, very little shade change is encountered and fastness to washing is improved.

CALCOFLUOR SEA GREEN

(Calco)

This is a new dispersed dye which, when applied to acetate or nylon at low concentrations, produces a greenish white fluorescent color. At high concentrations, it builds up to a light yellowish color. One recommended use is in combination with red shade synthetic fiber brighteners to neutralize their reddish cast. Another application is to impart increased brilliance to fluorescent yellow dyes, particularly when viewed in ultraviolet light. A third recommended application is to increase the brilliance of fabrics dyed with basic yellow or green dyes.

CALCOGENE BLACK GXCF SOLUTION

(Calco)

This product is a solution type corresponding to the established powder type Calcogene Black CXCF Conc. Among the advantages of a solution type: there is no need to handle and weigh large amounts of powdered dye and sodium sulfide and boil them in order to effect solution. It is possible to measure the adds to the machine by volume measurement from conveniently located dye drums. This dye is said to be suited to application in stock package and beam dyeing machines where the textile material has a filtering action. It is also suitable for application by padding processes because dye baths of high concentration can easily be prepared.

CALCONYL ORANGE R

(Calco)

This is a stabilized azoic dye available in single solution, double solution and powder. Its fastness properties are comparable to the other Calconyl solutions and powders and is completely compatible with them in printing applications. While specially recommended for cotton printing, it can also be used on viscose. When properly applied, it produces prints said to possess good to excellent fastness to wash, perspiration, dry cleaning and cotton pressing. The lightfastness is good in heavy shades. It may be applied in conjunction with soluble vats and resin-bonded pigments which are suitable for the acid aging necessary for their development. The usual method of application is to print with standard thickener and develop by aging in acetic acid fumes.

CALCOSOL GOLDEN ORANGE 3G PASTE

(Calco)

This vat dye produces pleasing bright orange shades on viscose rayon or cotton. Since it does not tender the fiber when the fabric is subjected to prolonged sun exposure, this dye may be used for curtains, draperies and awnings. It is also recommended by the manufacturers for colored effects in fabrics which are to be chlorine bleached after weaving because it does not tender the fiber during the chlorine bleaching. Another important advantage is a negligible change of shade and strength which is brought about by soaping the material after dyeing.

CALCOTONE BLUE 4GP PASTE
(Patent 2486351)

(Calco)

This is a dispersion of the well known pigment phthalocyanine blue but it is greener and brighter than the usual phthalocyanine blue. It is said to have very good fastness properties, particularly fastness to light. It is particularly recommended by the manufacturers in paper coating applications with the normal coating adhesives such as casein, starch and latex. It may be used in beater dyeing of paper. In textile printing, it works very well in selected textile printing gums.

CALCOTONE HANSA YELLOW PASTE

(Calco)

This dispersion of the well-known pigment Hansa Yellow produces green and bright shades and is particularly applicable to coloring paper. It is especially recommended by the manufacturers for paper coating and possesses properties which make it compatible with the normal coating adhesives such as casein, starch and latex. It is said to possess good fastness to light and alkali which should make it an acceptable colorant in grades of coated and decorative paper which require these fastness properties.

CALCOTONE SCARLET 2YP PASTE

(Calco)

This product is a pigment dispersion which is especially recommended by the manufacturers for coating, beater and decorative application to paper where the demand is for a tinctorially strong, low-cost pigment. It is a yellow shade scarlet and is compatible with the normal aqueous coating adhesives such as casein, starch and latex.

CALCOTONE TOLUIDINE RED YP PASTE

(Calco)

This is a dispersion of the well known pigment toluidine red. It is particularly recommended by the manufacturers for better dyeing and coating of paper where good fastness to light is required. It is also alkali fast and can be used in the production of melamine paper base laminates having good lightfastness. When used with a suitable binder, it also is expected to be applicable to cotton printing.

"CELANTHRENE"* CERISE B

(Du Pont)

An outstanding disperse-type dye that is especially recommended for application to "Dacron"* polyester fiber, "Orlon"* acrylic fiber, nylon and acetate. It produces bright, attractive shades of pink, is level dyeing and has very good build-up properties. When dyed in light shades on type 42 "Orlon", it is said to demonstrate particularly good fastness to light, washing and perspiration. On nylon, the color yields bluish-pink shades, builds up well and has good fastness. The physical characteristics of "Celanthrene" Cerise B are such that it is suitable for producing speck-free prints with good color value on both acetate and "Dacron".

* Registered Trade Mark

"CELANTHRENE"* FAST BLUE 2G

(Du Pont)

Produces bright non-subliming aquamarine shades said to possess good fastness to perspiration, crocking, hot moist pressing and fairly good resistance to washing. It becomes greener under artificial light and can be used as a neutralizing component for blue and violet combinations that flare red. "Celanthrene" Fast Blue 2G is suitable for both acetate and nylon and when used with "Acetamine"* Fast Yellow 4RL and "Celanthrene"* Fast Pink 3B exhibits good fastness to light on bright nylon automotive upholstery fabrics. Draperies, blouses, evening gowns, sportswear, linings and lingerie are other recommended end uses for this dye. "Celanthrene" Fast Blue 2G is a fine, easily dispersed powder and is applied to staple, yarn or piece goods by the usual methods. It has good affinity, is absorbed readily and transfers well. Cotton and rayon are stained considerably, while wool is stained very much. "Celanthrene" Fast Blue 2G is of interest as a speck-free printing color for light shades on acetate and does not mark off when subjected to wet finishing treatments. It is not suitable for discharge.

* Registered Trade Mark

CELLITON FAST BLUE FBBN

(General Dyestuff)

A readily dispersible anthraquinone dyestuff, which dyes bright fast-to-light blues of good tinctorial value on acetate and also on nylon. Approximately equal affinity and dyeing properties at both high and moderate application temperatures and better-than-average tinctorial value make this blue useful for the production not only of bright-blue but also of mode shades, such as dark or light greens and browns. Levelness and penetration may be obtained for such dyeings on either jig or reel at either high or moderate temperatures on acetate. Celliton Fast Blue FBBN is recommended by the manufacturers for use on dress goods in both light and heavy shades and for upholstery and decorative fabrics only in heavy shades. Dyeings on acetate should be aftertreated for improvement of resistance to gas fading. Celliton Fast Blue FBBN is useful for light and medium shades on nylon dress goods, decorative fabrics, knit goods, and lingerie, on which it builds up well to give bright, strong blues. It is stated that very strong tinctorial value on nylon in light shades and very good level-dyeing properties make this blue especially useful as a blue component in dyeing nylon hosiery.

CELLITON FAST YELLOW GGLL-CF
CELLITON FAST YELLOW 3RLL-CF

(General Dyestuff)

Straight disperse (acetate-type) dyestuffs, which are especially recommended by the manufacturers for the dyeing of light shades on acetate textiles when the best possible light fastness is required. They are also recommended for heavy as well as light shades of better than usual light fastness on some of the new wholly synthetic fibers, such as nylon, Dynel, and "Dacron" polyester fiber.

CELLITON FAST YELLOW 4RL CONC NEW CF

(General Dyestuff)

A new straight disperse (acetate) dyestuff, similar in shade and in fastness properties to the old Celliton Fast Yellow 4RL Conc but said to be sufficiently different chemically to give much better money value than the old product on acetate at 160°F. This new brand is recommended for dyeing acetate, Dacron, Orlon 42, and Dynel. It exhausts medium rapidly and yet fully on acetate at both 160 and 190°F to give bright, reddish-yellow shades, which are claimed to be distinctly greener and brighter than those obtained with the old yellow. These dyeings are said to exhibit excellent fastness to light (7-8) and excellent fastness to gas fading on acetate (5), and they are dischargeable. The fastness and dyeing properties are also said to be superior on nylon, Dacron, Orlon 42 and Dynel.

CELLITON NAVY BLUE BBG

(General Dyestuff)

A new, readily dispersible dyestuff with very good dyeing properties over a wide temperature range, which is especially suitable for the production of deep navy shades on acetate and nylon when economy and ease of application are important.

See pages 809-810 for manufacturer's addresses

CHINOLINE YELLOW D CONC

(General Dyestuff)

A straight, level-dyeing, acid dyestuff (CI 801), giving brilliant greenish-yellow shades said to be of fairly good fastness properties when dyed or printed on wool or silk. As a dyestuff unaffected by the reducing type of discharging agents, it is useful for colored discharges on silk and wool. It may also be used for application prints on these fibers. Since the greenish-yellow shades obtained on wool or silk with Chinoline Yellow D Conc are excelled in brightness and greenness by very few dyestuffs, it is employed mostly for bright yellows and greens. For bright greens in dyeing it is normally combined with Patent Blue VF Extra Conc, which has about the same fastness to sunlight and washing. For discharge-printing bright greens it may be combined with Wool Fast Blue GLA; and for application-printing greens, it is combined with Brilliant Indocyanine GA-CF. Chinoline Yellow D Conc is recommended by the manufacturers where brightness is an important consideration and moderate lightfastness suffices for such final uses as wool knitting yarns, light-weight woolen fabrics that may be carbonized after dyeing, and wool billiard cloths. It is especially recommended for colored-discharge yellows, greens and other bright shades on silk or wool dress goods, scarves, and neckwear. It may also be employed for direct application prints on these same fabrics.

CHROMOXANE BRILLIANT RED BL

(General Dyestuff)

A straight chrome dyestuff for wool (and also silk), which is claimed to give the brightest bluish-red chrome shades on wool of any dyestuff presently available. It is said to level excellently on wool and to be suitable for chrome-bottom and metachrome as well as top-chrome application. Dyeings are claimed to display very good fastness to washing and fulling and good fastness to light. It is especially useful as a shading color or for self shades when both brightness and chrome fastness are required.

CUPROFIX RED C8BL Pat

(Sandoz)

The manufacturer reports this to be the brightest red available for aftertreatment with Cuprofix or with copper sulfate. Like other colors in their "C" group (C8BL) the product requires aftertreatment to obtain its maximum fastness. Fastness to washing, light and perspiration is reported as excellent. Acetate is left white. It is especially recommended for Cuprofix and urea-formaldehyde treatment which greatly increases light fastness.

CUPROFIX RED VIOLET CBL

(Sandoz)

Another addition to the Sandoz line of colors which, when aftertreated with Cuprofix, has excellent fastness to light (7-8) and wash fastness surpassing their earlier Cuprofix Rubine brands. It is also reported to be excellent to perspiration, water and hot-wet pressing. It is dischargeable and especially suitable for Cuprofix/urea-formaldehyde treatment without any loss of its excellent light fastness. Like other colors in their "C" class, it can also be aftertreated with copper sulfate.

CUPROFIX YELLOW C2RL

(Sandoz)

A brand new direct dye requiring aftertreatment with Cuprofix or copper sulfate to obtain its proper shade and fastness. The manufacturer claims it to be their fastest to washing yellow in this series and highly recommended for hosiery, knitwear and other washable materials. Also suitable for use in the combined Cuprofix/urea-formaldehyde treatment or Cuprofix/melamine, the former improving the light fastness one "L" number.

"DIAGEN"* BLUE MGD SOLUTION

(Du Pont)

A stabilized azoic type for printing cotton that is especially prepared for immediate use by mixing with a neutral thickener such as starch tragacanth. It yields attractive reddish-blue shades and is of interest for producing navy blues that are said to have very good fastness to dry cleaning, hot moist pressing, alkali treatments, dry crocking, and good fastness to chlorine and wet crocking. "Diagen"* Golden Yellow MRS can be shaded with "Diagen"* Blue MGD Solution to produce a range of browns that have better light fastness than the unshaded dye. On exposure to light, "Diagen"* Blue MGD Solution has a monotone fade at all strength concentrations. It is stated that "Diagen"* Blue MGD Solution is not affected in shade when it is printed alongside or overprinted with oil-in-water or water-in-oil emulsion pigment printing systems. The color is also said to show good resistance to shade change in heavy prints and fairly good resistance in light prints when plissé printed. Recommendations for the use of the color include the printing of materials for table cloths, tea towels, dress goods and similar items where economy, ease of application and wet fastness properties are required. "Diagen"* Blue MGD Solution is offered as a nonspecking product, has good solubility and exhibits satisfactory stability in the printing paste.

* Registered Trade Mark

"DIAGEN"* RED FB

(Du Pont)

A stabilized azoic-type printing color producing bright, bluish-red shades. It is suitable for printing cotton and rayon to be used for dress goods, draperies, towels and other similar items. This new product is also suitable for plissé printing of cotton where it is said to retain its brightness and blueness of shade after the caustic treatment. It is said to have good fastness to chlorine, dry crocking, dry cleaning, hot moist pressing, water spotting and washing. In physical form "Diagen"* Red FB is a soluble powder specifically prepared to produce grit-free printing pastes. It is said to be readily soluble, to penetrate well and possess good stability when made up into stock solutions.

* Registered Trade Mark

DIAMOND BLACK PLC

(General Dyestuff)

A chrome black for wool, which is reputed to be characterized by excellent light fastness, excellent solubility, and especially by leaving wool in excellent condition after application. The fastness properties of chromed dyeings are said to be, in general, very good to excellent, including particularly excellent fastness to washing and fulling and, as the name would indicate, excellent fastness to potting and carbonizing. The crowning advantage claimed for this richly colored black of such excellent fastness is economy.

DIPHENYL RED RW

(Geigy)

It is said that Diphenyl Red RW produces bright shades of scarlet on cotton and rayon with unusually good wet fastness. The resistance to water bleeding and perspiration is also excellent while the light fastness rates fair. The manufacturer also points out that Diphenyl Red RW, being well suited for discharge, has been found well adapted for the production of dischargeable ground shades replacing developed colors in this respect. It is stated that the excellent wash fastness of Diphenyl Red RW approaches that of the developed colors without aftertreating or developing, and thus offers great economy.

DIRECT FAST SCARLET YA

(Pharma)

A bright, full shade of scarlet for direct dyeing of cotton and viscose. This product leaves acetate white, staining silk, wool and nylon slightly. The general wet fastness properties are said to be good.

DU PONT BASIC BLUE OB

(Du Pont)

Reddish-blue shades having very good light fastness on type 42 "Orlon"* are said to be characteristic of this new basic dye. It is also said to possess good wet fastness, shows good level dyeing properties and can be used in unions of "Orlon" and wool, leaving the wool white, and in blends of "Orlon" and rayon in which the rayon is stained very slightly. Du Pont Basic Blue OB has little affinity for acetate and nylon and will produce medium blue shades on silk.

* Registered Trade Mark

DU PONT BASIC RED 4G

(Du Pont)

Produces extremely brilliant fluorescent shades of scarlet on "Orlon",* type 42. As with the other new basic dyes, this product is said to have good lightfastness since it shows no break until exposed in the Fade-Ometer for 20 hours. It does evince a slight tendency toward blueness in a few hours' exposure but the shade returns upon heating and further exposure. It is stated that Du Pont Basic Red 4G has good wet fastness properties and is recommended for use in union dyeing "Orlon"* and wool, where it will not stain the wool. In blends of "Orlon"* acrylic fiber and rayon, only a slight staining of the rayon component is evident. Du Pont Basic Red 4G possesses good affinity for acetate and silk and demonstrates fastness properties similar to those on "Orlon."*

* Registered Trade Mark

DU PONT BASIC YELLOW OL

(Du Pont)

Produces brilliant, greenish-yellow shades on type 42 "Orlon"*. It is stated that it will withstand 40 hours Fade-Ometer exposure and show generally good fastness to wet processing. This new product is especially adapted to dyeing blends of "Orlon"* and wool, the "Orlon"* being dyed and the wool left white. Du Pont Basic Yellow OL is of interest for dyeing silk and acetate and shows very little staining of cotton and rayon in blends with "Orlon".*

* Registered Trade Mark

DUROFAST BLUE PLL

(Berkshire)

This is an extremely level dyeing direct color which in full shades is said to have excellent fastness to light and when treated with resins and copper complexes withstands AATCC wash test #3. It has the valuable property of leaving acetate effects white.

DUROFAST RED 6BLL

(Berkshire)

This direct dyestuff is recommended by the manufacturers for the dyeing of cotton and of rayon in the form of yarns and piece goods for which highest requirement of light fastness is demanded. It is said to reserve nylon and acetate effects. It is recommended for use on fabrics requiring aftertreatment with resins and with copper complex and resin.

DUROFIX BLACK OTB

(Berkshire)

Suitable for dyeing as a direct as well as a developed color. Particularly recommended as a direct dyeing color for spun rayon fabrics containing acetate effects which must be left white. This product is said to show practically no change in shade in fabrics which are treated with resin and with resin and copper complexes after which the shades exhibit outstanding wash fastness.

DUROFIX BLUE RL
DUROFIX BLUE GRL
DUROFIX BLUE BLG

(Berkshire)

Recommended for the dyeing of navy blue shades which must withstand AATCC wash test #3 after treatment with resin and copper complexes. It is claimed that these aftertreatments alter the shades very slightly and that acetate effects are stained to a minor degree.

EMBOPRINT* COLORS
Patent Pending

(Metro Dyestuff)

A complete line of heat stable inks for the simultaneous embossing and printing of cellulosic and other fibers in the valleys of a printing pattern. Stable to embossing and curing temperatures of 300 to 450° F, these inks yield sharply defined 3-dimensional prints on cloth said to be of excellent fastness to washing, crocking and light and good fastness to dry cleaning. The extremely finely dispersed coloring matter

* Registered Trade Mark

See pages 809-810 for manufacturer's addresses

in a solid solution of resin permits even and uniform printing of long runs of cloth. The colors may be applied on the conventional embossing machine. The Emboprints are supplied as color concentrates along with high viscosity and low viscosity clears. Colors available are as follows:

EMBOPRINT* GREEN B CONC
EMBOPRINT* BLACK B
EMBOPRINT* GOLD PM
EMBOPRINT* BLUE G CONC
EMBOPRINT* BROWN N CONC
EMBOPRINT* MAROON R CONC
EMBOPRINT* RED R CONC
EMBOPRINT* RED G CONC
EMBOPRINT* ORANGE O CONC
EMBOPRINT* YELLOW G CONC

* Registered Trade Mark

ERIO NAVY BLUE M

(Geigy)

An acid color developed primarily to produce economical, simply applied shades of navy on spun and filament nylon. This color is said to exhaust well from a strictly neutral bath and this simplicity of application coupled with fair all around fastness is said to make it an exceptionally useful color to the dyers of nylon.

ERIONYL* YELLOW G
ERIONYL* ORANGE R
ERIONYL* RED B
ERIONYL* VIOLET R
ERIONYL* BLUE B
ERIONYL* GREEN G
ERIONYL* BROWN G
ERIONYL* BROWN 2B
ERIONYL* GREY B
ERIONYL* FAST NAVY BLUE B

(Geigy)

It is said that this new range was developed by the manufacturer as an answer to the problems that have arisen in the past few years in securing satisfactory unions on blends of staple nylon and wool. Previous remedies which worked well in one particular blend failed to satisfy when the ratio of wool/nylon was changed or the depth of shade varied. The Erionyls are designed to produce balanced blends in all depths and ratios when dyed in conjunction with Erional NW—the amount of Erional NW being varied according to a set formula depending on the depth of shade.

It is further stated that the Erionyls are rated very high in all around fastness properties and are designed to work well in combination with each other to produce a wide variety of shades.

* Registered Trade Mark

FAST BROWN SALT V

(General Dyestuff)

A stabilized, water-soluble salt of an organic base in ready-to-use form for coupling with selected naphthols on cotton, rayon, and other cellulosic fibers by dyeing methods to produce deep, rich, brown shades said to be of excellent washfastness, good lightfastness, and excellent dischargeability. The strong browns obtainable with this salt are not only very economical in dye cost but they are most advantageously applied by low-cost continuous methods. Fast Brown Salt V is recommended by the manufacturer for deep brown shades for end uses like washable dress goods, playclothes, and table linen when economy as well as washfastness is desirable. Excellent (5) dischargeability of all its recommended combinations is said to permit use of this salt for the production of ground shades for white and colored discharge patterns, especially when Indanthrene washfastness is required for items that are subject to repeated washing.

FAST RED AL SALT

(Pharma)

A diazotized and stabilized salt for simple coupling with naphthols. The product has all the excellent properties of this group.

FAST RED PDC SALT

(Pharma)

The diazotized and stabilized salt of the PDC base. This product carries the excellent properties of the group with the ease of application and coupling with naphthols.

FASTUSOL BLUE LFFR-CF
FASTUSOL BLUE LF3GL-CF

(General Dyestuff)

Straight, fast-to-light, direct dystuffs of exceptional brightness, which are recommended by the manufacturers for dyeing cotton, rayon, and silk when very bright blue shades of excellent light fastness are required. Greens of comparable fastness and brightness are made by combination with Fastusol Yellow L5GA-CF. Fastusol Blues LFFR-CF and LF3GL-CF have proved particularly suitable for mixed cotton and rayon draperies; silk draperies, decorative fabrics and dress goods; upholstery fabrics of mixed constructions; cotton tapes and draw cords for Venetian blinds; cotton and rayon linings for automobile bodies. It is stated that, wherever excellent light fastness and brightness are at a premium and good washfastness is not required, these blues are of special interest. In the clothing field these direct dyes are recommended for rayon dress goods, particularly if the rayon is to receive an anticrease finish. They are also useful for children's novelty socks and other textiles containing cotton and rayon when solid coverage of both fibers is desirable. When somewhat better than commercial wetfastness is necessary, dyeings aftertreated with Solidogen WF alone or with a resin finish and Solidogen WF may be employed. The ability of these dyes to leave acetate, nylon, and wholly synthetic effect threads clean or nearly clean is an important advantage for many uses.

FASTUSOL BLUE LRRU

(General Dyestuff)

A stright direct dyestuff yielding bright reddish-blue shades on cotton and rayon. Dyeings on rayon are said to be characterized by excellent (7) fastness to light, which is unaffected by anticrease-resin finishing. It is claimed that acetate effect threads in mixed fabrics are left clean, that nylon is only slightly stained, and that dyeings display very good (4) dischargeability.

FASTUSOL GREEN BA-CF

(General Dyestuff)

A straight direct dyestuff (Pr 425) recommended for fast-to-light green and combination shades on cotton, linen, and rayon. An important feature of Fastusol Green BA-CF is the considerable improvement in wash fastness obtained from aftertreatment of dyeings with Benzofix CWF. Self shades produced with Fastusol Green BA-CF are somewhat bluish in shade and reasonably bright. By combination with Fastusol Yellow LRTP Ex Conc CF or with the still brighter Fastusol Yellow L5GA-CF a wide range of fast-to-light yellowish greens can be produced. When aftertreatment for improved wet fastness is necessary, it is advantageously combined with Benzofix Yellow GWL for a range of fast-to-light greens. A desirable property of this green for combinations is that self colors appear only slightly yellower and duller in artificial light. Fastusol Green BA-CF is particularly useful for rayon dress goods, especially upon aftertreatment with Benzofix CWF, either alone or in combination with Benzofix colors. It is stated that the very good (4) fastness to washing of such dyeings is sufficient to withstand the most severe conditions to which rayon is commonly subjected. When wet fastness is not so important, such as for rayon decorative ribbons, draperies and upholstery, this green is applied without aftertreatment. In full shades the fastness to light on cotton is also adequate for similar purposes, including tapes for Venetian blinds. Ability to dye cotton and rayon well below 160° F and to leave wool undyed, especially in the presence of 3% Katanol W, owf, makes it useful for speck-dyeing mixed fabrics to leave wool either white or a previously dyed contrasting color.

FASTUSOL ORANGE L8GL-CF

(General Dyestuff)

A straight, fast-to-light, direct dyestuff recommended for cotton, rayon, linen, and silk. This valuable new addition to the line of Fastusol L colors is especially useful for rayon piece goods that are to be given an anticrease resin finish as the shade and light fastness are scarcely affected by resin finishing.

Fastusol Orange L8GL-CF, one of the fastest-to-light oranges in the Fastusol line, gives bright, strong, yellowish oranges, which are somewhat yellower than those dyed with Fastusol Orange L7G-CF, which is nearest in light fastness.

FASTUSOL ORANGE L4GU-CF

(General Dyestuff)

A new, straight, exceptionally bright and strong yellowish orange, dyeings of which are said to be characterized by very good light fastness on cotton and rayon. Such dyeings are claimed to be improved considerably in fastness to light with very good maintenance of shade upon anticrease resin finishing, the fastness on rayon becoming excellent to maximum (7-8,8). Heavy dyeings are said to be suitable for color discharge (neutral dischargeability, 3; alkaline dischargeability, 4).

FASTUSOL RED L4BL-CF

(General Dyestuff)

A straight direct dyestuff (Pr 428) for dyeing fast-to-light red and combination shades on cotton, rayon and silk. Besides excellent light fastness, this dyestuff is said to be especially characterized by suitability for use on rayon piece goods that are to be given an anticrease resin finish. The strong red shades produced with Fastusol Red L4BL-CF are recommended by the manufacturers for rayon dress goods, slacks, and sport shirts, both for solid shades and as a ground for white and colored discharges. Such rayon materials are advantageously treated with an anticrease resin finish, especially when it is combined with Zenzofix CWF to obtain somewhat better light fastness and especially much better wash fastness, permitting washing at higher temperatures. Where fastness to light is paramount and fastness to washing and crease resistance are not important, such as for rayon curtain materials and decorative upholstery braids, this red is often applied without subsequent aftertreatment of any kind.

FORMAL NAVY BLUE 2B

(Geigy)

It is said that the outstanding feature of this new dyestuff is its ability to produce uniform, level results with very good wash and lightfastness. It is well adapted for urea formaldehyde anticrease work and when aftertreated with UF resin plus Gycofix 67 the fastness properties are materially improved. Formal Navy Blue 2B draws very slowly and requires an abnormal amount of salt to exhaust, making it ideal when used for feed ons or as a shading color, for it will still produce uniform, level results when added to an already heavily salted bath at high temperatures. It is further said to be offered at a price which coupled with its good tinctorial strength makes it attractive from an economical standpoint.

HELIOGEN BLUE BLE POWDER

(General Dyestuff)

A phthalocyanine blue pigment, which is reported as being an improvement over Heliogen Blue BNC Powder New CF with respect to bleeding in alcohol and stability in alkyd enamel formulations. Although this product does show slight crystal growth upon long digestion in ACS Toluene, it is said to have excellent stability in lacquers and enamels and is therefore recommended for use in these mediums, in which it displays the fastness to light and the chemical resistance for which phthalocyanine pigments are known. It is also recommended for use in printing inks.

HELIOGEN GREEN GB PRESSCAKE NEW

(General Dyestuff)

A straight copper polychlorophthalocyanine pigment with the usual extraordinary fastness to light and chemical stability characteristic of this group of products. This Heliogen pigment is in the form of a thick, lumpy, presscake containing about 32% dry solids, including added surfactants. These surfactants make it especially suitable for laking and for use as a soft-grinding dry pigment. Where surfactants do not interfere, it is recommended for use by flushing methods.

HELIZARIN COLORS

(BASF)

A range of pigment colors for printing textiles. These colors are fixed with a Helizarin Binder on the fiber. The Helizarin colors are oil-in-water emulsions (water in the outside phase) and are very simple to prepare and apply for machine printing, screen printing and spray printing. They may be printed alongside aniline black, colored resist with Variamine Blue, fast color salts, discharge prints, etc. The prints are said to be characterized by their brilliance and levelness of shade and light and washfastness on both cotton and rayon. They also are said to possess exceptional fastness to wet and dry crocking and all prints give a soft hand. The Helizarin colors are also suitable for printing acetate, nylon and Fiberglas.

HEMASOL AR PASTE

(Yorkshire)

A special logwood product especially recommended by the manufacturers for use where a logwood black is to be applied to 100%

acetate piece goods or nylon piece goods to be dyed in the usual jig. The shade is obtained by oxidizing the Hemasol AR Paste in a separate bath with bichromate of soda. The logwood black so produced is said to be extremely fast to washing, acid and alkaline, perspiration, gas fading, and to have a light fastness figure of approximately 5.

HILTONAPHTHOL® AS-SG

(Hilton-Davis)

This product is of particular interest in producing good blacks with several developers. Hiltonaphthol AS-SG is recommended by the manufacturers for coupling with Hiltonil Fast Red B Salt or Hiltonil Fast Blue BB Salt. The naphthol is a valuable shading component for the dyeing of maroon or wine shades slightly duller in cast than those produced with high substantivity naphthols, such as Hiltonaphthol AS-SW. Substantivity of Hiltonaphthol AS-SG is high, being in the range of 97% in a 1:20 bath ratio. Fastness properties are said to be good with excellent fastness to light and washing, and with fairly good fastness to chlorine.

* Registered Trade Mark

HILTONAPHTHOL* AS-SG SOLUTION 20%

This product is the sodium naphtholate of Hiltonaphthol AS-SG Powder and is said to be noted for good solution stability and ease of handling in the dyehouse.

* Registered Trade Mark

IMPERIAL ACETATE DISPERSIONS

(Imperial)

These products are dry powders containing 50% pigment dispersed in cellulose acetate. They can be supplied with almost any pigment required, including Phthalocyanine Blue, Phthalocyanine Green, Jet Black, Pigment Green B, etc. Controlled particle size permits rapid redispersion by simple mixing into the acetate-acetone dope which can be spun directly to yield uniform, highly colored fibers.

INDANTHRENE BLUE GREEN FFBA DOUBLE EXTRA PASTE FINE

(General Dyestuff)

A straight vat dyestuff (Pr 444) manufactured especially for printing shades of excellent fastness properties on cotton, linen, and rayon. Indanthrene Blue Green FFBA Double Extra Paste Fine is in excellent condition for printing as it is a smooth-flowing, nonsettling, speck-free paste, which is resistant to both drying out and freezing. It gives stable print pastes characterized by quick fixation in normal steaming.

INDANTHRENE BRILLIANT YELLOW 5GL PASTE

(General Dyestuff)

A straight vat dyestuff for dyeing cotton, linen, and rayon, which was developed to meet the need for a bright greenish yellow comparable in light fastness with other very fast vat dyes. The bright, strong, greenish-yellow self shades produced in dyeing by the new product are considerably greener than those obtained with Indanthrene Brilliant Yellow 3G. Indanthrene Brilliant Yellow 5GL Paste is a nonsetting, thin, speck-free paste prepared especially for pigment padding. It is stable without limit in storage but must be protected from drying out and freezing. Indanthrene Brilliant Yellow 5GL Paste is recommended by the manufacturers for bright dyeings of superior fastness on table linen, towels, sportswear, curtains, draperies, washable dress goods, anklets, and shirtings.

INDANTHRENE GREEN BLUE 3G DOUBLE PASTE

(General Dyestuff)

A new anthraquinone-type dyestuff manufactured in the form of a free-flowing water paste recommended for printing and dyeing fast shades on cotton and rayon. It is said to give excellent-to-outstanding (7-8) fastness to light in full shades, good fastness to water spotting and hot pressing and very good (4) fastness to 0.3%—active chlorine. It is recommended for pad-jig application in dyeing and, because of stability at high temperature, for continuous application on Williams and pad-steam ranges.

INDANTHRENE PRINTING VIOLET 6RB EXTRA PASTE FINE

(General Dyestuff)

A straight, anthraquinone vat dyestuff in the form of a nondrying, speck-free smooth paste of medium consistency recommended for printing cotton and rayon. It is said to give very economical, very reddish shades of violet, which display good (5) fastness to light in full shades, and very good (4) fastness to washing and to 0.3%—active chlorine.

INTERCHEM® ACETATE BLUE NBN

(Interchemical)

Interchem Acetate Blue NBN was developed specifically for dyeing bright royal blue shades on acetate. When dyed on nylon, the shades are slightly redder. Interchem Acetate Blue NBN is said to provide good lightfastness in medium and dark shades. It can be employed as a self-shade and for producing compound shades, and is especially useful as the blue component for producing navies, dark greens and browns. It can be applied either on jigs or boxes at temperatures from 160-190°F. It is stated that it has excellent pile on and level dyeing properties at both high and low dyeing temperatures. The color yield is good even at the low temperature of 160°F. When dyed at concentrations over 2%, this new dye has outstanding exhaustion properties. Interchem Acetate Blue NBN is an important all-round color. It is suitable also for dyeing Dacron and Dynel.

INTERCHEM® DIRECT ACETATE BLACK NCS
INTERCHEM® DIRECT ACETATE NAVY BLUE NVYS

(Interchemical)

These two new Interchem Acetate Dyes were developed specifically for dyeing full, deep blacks and navies on Dacron staple. The shades produced with these new dyes are said to possess good all-round fastness properties. Dyeing can be carried out in a neutral, acid, or alkaline dyebath. These two new dyes are suitable for dyeing Dacron staple in the form of raw stock, yarn, woven fabrics, knit goods, and hosiery. The procedure for dyeing is essentially the same as for dyeing acetate and nylon, with the exception that phenyl methyl carbinol, benzoic acid, or another suitable carrier is employed. When applied to Dacron staple, these dyes exhaust well, have excellent build up, and are level dyeing.

IRGALAN® BROWN VIOLET DL	—Patented
IRGALAN® RED 3G	—Patented
IRGALAN® BORDEAUX 2BL	—Patented
IRGALAN® YELLOW 2RL	—Patented

(Geigy)

The Irgalan range of colors has been expanded by the addition of the above products. These new types are said to possess the same extremely high all around fastness properties of the previous colors in the series, and are said to approach or exceed in this respect the fastest wool colors used heretofore. The manufacturer also states that, not only do these new additions possess almost the identical fastness properties of the preceding Irgalans, but they draw and work exactly alike as the older colors and with each other, thus enabling the dyer to use them in combination like a homogeneous dyestuff. It is further said that the same evenly penetrated, level results are obtained with these new colors on all types of woolen yarns and piece goods. They are also well adapted for use on spun and filament nylon and on real silk, having the same high quality fastness on these fibers as on wool.

* Registered Trade Mark

KATIGEN CUTCH BROWN RN PASTE
KATIGEN BORDEAUX B PASTE
KATIGEN BROWN W PASTE
KATIGEN DIRECT BLUE BR PASTE
KATIGEN YELLOW GG PASTE
KATIGEN GREEN BBF PASTE
KATIGEN BLUE GREEN GA PASTE
IMMEDIAL NEW BLUE FBLA PASTE
INDO CARBON CLGS PASTE FINE CF

(General Dyestuff)

A new series of sulfur dyestuffs prepared in the form of dispersed pastes according to a new concept of sulfur colors whereby they are to be applied by the methods that have been so successfully employed for vat dyestuffs. These new products are therefore recommended for continuous application by the pigment-pad method with reduction with either sulfide and alkali or hydrosulfite and alkali in a Williams or pad-steam range. These sulfur-dye pastes are also recommended for circulation as pigment in circulating yarn-dyeing machines before reduction.

LANASYN BROWN 3RL (Pat Appl for)

(Sandoz)

A new reddish, homogeneous brown, having similar high fastness as Lanasyn Brown RL Pat. and suitable for use on wool, nylon or silk. Its very red shade, plus its excellent fastness properties, are said to make it an ideal red element for shading of other colors in this series. Like other Lanasyn colors, Lanasyn Brown 3RL is dyed close to the neutral point, and needs no chrome additions to obtain its maximum fastness. However, it is highly recommended as a shading color in chrome dyeing.

LANASYN ORANGE RLN (Pat Appl for)

(Sandoz)

Another addition to the Sandoz line of premetallized dyestuffs of the milling and neutral-dyeing type. Like other colors in this group, they report this dyestuff to have excellent fastness in practically every category, except potting and cross dyeing, and suitability for most uses on raw wool stock, top, yarn or piece goods. Similar excellent fastness is obtainable on nylon or silk.

LANASYN YELLOW 2RL (Pat Appl for)

(Sandoz)

The maker reports this new addition to the Lanasyn line to be considerably redder than their Lanasyn Yellow GL. Like other colors in the series, it is reported to have excellent fastness to light, fulling, carbonizing, decatizing, washing, perspiration, chlorination and good resistance to copper and iron. These features are also reported to hold when dyeing nylon or silk.

"LATYL"® COLORS

(Du Pont)

These represent an entirely new group of dyes and were designed specifically for application to "Dacron"® polyester fiber in filament and spun forms. They are said to possess outstanding fastness to light and very good resistance to wet processing treatments. The "Latyl" colors are dyed by three methods: aqueous dyeing at atmospheric pressure, aqueous pressure dyeing, Thermosol dyeing.

* Registered Trade Mark

"LATYL"® BLUE GE

(Du Pont)

Produces bright, medium shades of blue. It is stated that it has very good light and wet fastness properties and is of interest for use in combinations where it shows good build-up even in heavy shades. It is particularly recommended as the blue component in mixtures with "Latyl" Violet B and "Acetamine"® Fast Yellow 4RL for producing midnight navies that are said to be unusually fast to light. Although "Latyl" Blue GE does not build up in deep shades on acetate it can be used in both light and medium shades requiring good light, washing and gas-fume fastness. The color is not recommended for application to nylon because of poor light fastness even though it does possess good affinity for the fiber. Medium shades (2.0%) of "Latyl" Blue GE on 50/50 "Dacron" and wool blends produce a definite stain on wool; however, the staining does not have a serious effect on wool fastness in light shades. Full shades (4.0%) dye both fibers to an equal depth but results show poor crocking fastness on the wool.

* Registered Trade Mark

"LATYL"® BRILLIANT BLUE 2G

(Du Pont)

Produces extremely bright, greenish-blue shades of interest for pastels and is a suitable blue component in formulating bright greens, grays, tans and browns. It is said to show excellent light fastness when applied from aqueous benzoic acid dyebaths and very good wet fastness properties. Brilliant lightfast greens are obtainable by combining "Latyl" Brilliant Blue 2G with "Celanthrene"® Fast Yellow GL Conc 300%. It is also recommended as a shading component for navies based on "Latyl" Violet B where it counteracts the red change in artificial light. "Latyl" Brilliant Blue 2G is said to be of considerable interest on acetate in pastel shades because of its remarkably good fastness to gas-fume fading and light. Light fastness of the color is also good on "Orlon"® acrylic fiber but is rather poor on nylon. When dyeing mixed fiber fabrics composed of "Dacron" and wool, "Latyl" Brilliant Blue 2G leaves the wool considerably stained but not enough to reduce wool fastness.

* Registered Trade Mark

"LATYL"* ORANGE R

(Du Pont)

Characterized by its bright, reddish-orange shade. It is said to be very fast to light and show high resistance to wet processing treatments. "Latyl" Orange R is level dyeing and is recommended for use with "Latyl" Brilliant Blue 2G in the production of level-dyed, light fast grays and tans. This color exhibits rather poor build-up in concentrations above 1.0% and it is therefore not recommended as the sole yellow or red component in heavy brown shades. On acetate, particularly in the pastel range, "Latyl" Orange R is said to possess good light, washing and gas-fume fastness. The color builds up well up to 1.0% on acetate but excessive concentrations produce a redder shade with no increase in strength. "Latyl" Orange R has good light fastness on "Orlon" acrylic fiber but is poor in this respect on nylon. The color is suitable for printing acetate in the lighter shades.

* Registered Trade Mark

"LATYL"* RED B

(Du Pont)

Produces bright, bluish-red shades and is said to have very good fastness to light when dyed from aqueous benzoic acid carrier baths. "Latyl" Red B has very good wet fastness properties. Although it sublimes or migrates on wet steaming, in heavy shades, it can be used advantageously in light shades of gray and tan because of its outstanding light fastness. In end uses such as men's suitings made from blends of wool and "Dacron"* or 100% "Dacron", the concentration of "Latyl" Red B should not exceed 0.5%. The dye can be used safely in stronger concentrations where sublimation is not a critical factor, such as in knitting yarns and draperies. Under artificial light "Latyl" Red B becomes yellower, which may counteract the redness of blues and violets used in the formulation of certain mixtures. "Latyl" Red B is also said to be of interest for its very good light fastness on acetate in the lighter shades. Heavy shades on acetate are not recommended since the color does not build up sufficiently.

* Registered Trade Mark

"LATYL"* VIOLET B

(Du Pont)

Produces bright, bluish-violet shades on both filament and spun "Dacron" and does not tar in the dyebath. "Latyl" Violet B is claimed to be an excellent base for brown, navy and black shades and is recommended for application to stock, top, tow, or fabric forms of "Dacron". Other features of the color are said to be its satisfactory light fastness, very good fastness to washing, dry cleaning, perspiration, sea water, hot moist pressing, crocking, gas-fume fading, and sublimation. "Latyl" Violet B builds up well on "Dacron" and is level dyeing. It is of interest as the blue component for "Dacron" in blends of "Dacron" and wool to be union-dyed. This new dye is not recommended for application to nylon because of poor build-up and light fastness on this fiber.

* Registered Trade Mark

"LATYL"* VIOLET 2R

(Du Pont)

Yields true violet shades said to possess very good all-round fastness. It works well in combinations but is not suitable as the base red or blue component in browns and blues where its red shade change under artificial light would be objectionable. "Latyl" Violet 2R yields bright red-violet shades on acetate that cannot be obtained with acetate dyes. Color build-up is not quite so good on acetate as on "Dacron"* but is satisfactory for light to medium shades. "Latyl" Violet 2R is of no interest for nylon because of poor light fastness and shade dullness.

* Registered Trade Mark

"LATYL"* YELLOW YL

(Du Pont)

Yields bright greenish-yellow shades that are said to have very good fastness to light, washing and sublimation. It is suitable for use in light to medium shades and as a shading component for tans and light browns. This product is very level dyeing, has satisfactory build-up to 2.0 per cent, can be applied at the boil with suitable carriers such as benzoic acid or orthophenylphenol and economically produces bright, level shades by the Thermosol process or when applied under pressure without a carrier. "Latyl" Yellow YL is said to also have good light, washing and sublimation fastness on other hydrophobic fibers and is recommended for use in light shades.

* Registered Trade Mark

"LEUCOSOL"* YELLOW LN PASTE

(Du Pont)

Produces bright, greenish-yellow shades on cotton claimed to be of superior lightfastness than is obtainable with other vat yellows for printing. This new anthraquinone vat color is recommended for application in light to heavy shades and especially in formulating chartreuse, green and brown shades. The light fastness of "Leucosol" Yellow LN Paste is maintained when the color is combined with other fast-to-light vat dyes. It should find extensive use in printing drapery, upholstery and dress goods fabrics. It is also suitable for printing rayon and is of interest for novelty effects obtained by colored discharge printing. "Leucosol" Yellow LN Paste is easily combined with gums and starches to form a printing paste of good viscosity that flows freely in the machine. Pastes can be held overnight without thickening of the printing gum. "Leucosol" Yellow LN Paste builds up progressively depending on concentration of color and without speckiness. Wet fastness properties are said to be good. This product is especially suitable for the printing of fabrics that are to be resin treated. Urea-formaldehyde resins do not alter the shade nor reduce light fastness. Melamine-type resins and "Zeset" S resin finish change the shade trace to noticeably weaker and decrease the light fastness slightly. Based on 4.0 per cent prints, the color exhibits a monotone fade on exposure in the Fade-Ometer, both before and after resin treatments.

* Registered Trade Mark

LUMICREASE GREEN 3LB (Pat Appl for)

(Sandoz)

Under this special designation Sandoz has added another color to their line of direct dyes possessing high light fastness and suitability for anticrease work. The new green is reported by the maker to be the first bright and truly fast to light direct green. The color shows a good reserve of small acetate effect patterns. It is being recommended for dyeing of cotton or viscose in yarn or piece goods for such end uses such as draperies, upholstery, auto-slip covers and special sewing thread. Because of its unusual high light fastness, only the very best shading colors should be used and Sandoz recommends the following:

LUMICREASE GREY 3LB (Pat Appl for)
PYRAZOL FAST YELLOW 2GLL
PYRAZOL FAST BLUE FGL
PYRAZOL DISCHARGE ORANGE GL
PYRAZOL DISCHARGE ORANGE 3LG
PYRAZOL FAST RUBINE FBL

LUMICREASE GREY 3LB (Pat Appl for)

(Sandoz)

A new dyestuff recommended by Sandoz where the ultimate in light fastness is required. They report ratings of L 6-7 in light shades and with no affect on shade or fastness by treatment with urea-formaldehyde. Fastness to washing, perspiration, water, crocking, heat and wet pressing are also rated excellent, as well as its reserve of acetate. Its greatly superior light fastness, plus its other properties, are said to make it a valuable color for drapery, automobile and upholstery fabrics.

LUMIGRAPHIC* RED X-2489
LUMIGRAPHIC* ORANGE X-2490
LUMIGRAPHIC* YELLOW R X-2491
LUMIGRAPHIC* YELLOW G X-2522
LUMIGRAPHIC* GREEN X-2523

(Imperial)

A series of fluorescent pigments suitable for printing inks and neutral print pastes. Fine particle size permits these colors to be used in letterpress, aniline, and rotogravure inks, as well as silk screen inks. They are said to possess excellent brilliancy with marked fluorescence in daylight or under ultra-violet light. Interior lightfastness is fair, but alkali resistance is poor.

* Registered Trade Mark

MAYVAT* BRILLIANT ORANGE RK PASTE

(May)

A cold dyeing vat dyestuff with high affinity and very good level dyeing properties on cotton. It is claimed that this color has very high lightfastness and yields a true peach shade in light to medium dyeings.

* Registered Trade Mark

MAYVAT* DIRECT BLACK HG DOUBLE PASTE
MAYVAT* DIRECT BLACK MB DOUBLE PASTE
MAYVAT* DIRECT BLACK FG DOUBLE PASTE

(May)

Additions to the Mayvat line of direct black colors. While there is a considerable change in shade when treated with chlorine or peroxide, nevertheless these blacks are said to possess such excellent build up values and are so economical that they are preferred by dyers for both yarn and piece goods dyeing because of their economy.

* Registered Trade Mark

MAYVAT* GOLDEN ORANGE 3G PASTE

(May)

A vat dyestuff said to possess good lightfastness with especially good wet fastness properties. It is a warm dyeing color which is said to be preferred by dyers because of its good behavior and all around dyeing properties.

* Registered Trade Mark

MAYVAT* GREEN BBL PASTE

(May)

A brighter and cleaner shade of Mayvat Olive Green B Paste. It possesses all the desirable properties of Mayvat Olive Green B Paste, and in addition it is distinctly greener and brighter.

* Registered Trade Mark

MAYVAT* YELLOW BROWN 3R DOUBLE PASTE

(May)

A new addition to the Mayvat line of specialty brown vat dyestuffs. This color is decidedly redder and brighter than Mayvat Yellow Brown RC Double Paste. It is recommended by the manufacturers for both packages, beams and piece goods, since it is a good level dyeing color. It is especially recommended for light brown and tan shades. It also is said to have excellent build up properties.

* Registered Trade Mark

MAYVAT* YELLOW PGA DOUBLE PASTE

(May)

A vat yellow said to possess very good lightfastness and wet properties which is preferred for Kelly greens, tans etc. This product is very well dispersed and suitable for all types of dyeing.

* Registered Trade Mark

METOMEGA CHROME BROWN PGL (Pat Appl for)

(Sandoz)

A new homogeneous and economical chrome brown, reported by Sandoz to have maximum fastness properties when dyed metachrome, but also workable top and bottom chrome. It is said to have excellent all-around fastness properties but to be outstanding in its nonbleeding property in cross dyeing (even with sulfuric acid), and excellent fastness to potting. Whereas many chrome browns turn quite red on exposure to light, Metomega Chrome Brown PGL fades on tone. The excellent all-around fastness and especially its unusual fastness to cross dyeing is reported to be of extreme interest in the dyeing of base shades in the popular cross-dyed bouclé and similar coating fabrics.

METOMEGA CHROME BROWN PRLL (Pat Appl for)

(Sandoz)

Sandoz reports this new product to be a still faster color than its popular predecessor, Metomega Chrome Brown RLL. The new type is slightly yellower and is expected to be an even better piece-dye color than the former brand. It is

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reported to be very much faster to light than any other brown in their Metomega Chrome series, as well as outstanding in fastness to potting and resistance to the damaging effect of iron or copper. Because of its unusual high light fastness, Sandoz recommends that the following colors should be used in combination with its:
METOMEGA CHROME YELLOW ME Pat
METOMEGA CHROME ORANGE ML
METOMEGA CHROME RED 2GLL Pat
METOMEGA CHROME BORDEAUX 2BL Pat
METOMEGA CHROME GREY BLC Pat

METRONE* PIGMENTS

(Metro Dyestuff)

A line of highly concentrated pigment dispersions in a synthetic resin binder. The Metrotones are applied from a printing viscosity water-in-oil emulsion to cotton, rayon and many synthetic fabrics. A full line of available bright shades is said to have excellent fastness to light and a high degree of fastness to washing, chlorine, dry cleaning and to gas fading when applied on acetate rayon. The colors are applied in a roller printing machine, dried and cured, or aged for a short time to develop maximum fastness. A soft, sharp print is obtained which requires no washing. The Metrotones can be compounded together to produce any shade desired and can also be run in combination with naphthols, vats, azoics and other soluble dyestuffs to produce unusual effects. Following are the shades available:
METRONE* BLUE OG
METRONE* BLUE O2G
METRONE* GREEN OB
METRONE* YELLOW O2G
METRONE* ORANGE OO
METRONE* RED OG

* Registered Trade Mark

"MONASTRAL"* FAST BLUE BNF POWDER

(Du Pont)

A copper phthalocyanine toner developed especially for use in paint systems. In either alkyd resin enamels or nitrocellulose lacquers it shows a decided advantage over older products in resistance to flocculation. The degree of flocculation resistance in some application is exceeded only by the more expensive laked products now marketed. "Monastral" Fast Blue BNF Powder is greener and brighter in shade than the widely used "Monastral" Fast Blue BNC Powder. This new product is said to exhibit the excellent stability to aromatic thinners as well as a high degree of light fastness and resistance to attack by chemical agents which are characteristic properties of earlier types.

* Registered Trade Mark

"MONASTRAL"* FAST GREEN GX POWDER

(Du Pont)

An outstanding new phthalocyanine green especially designed for use in paint. In lacquer, enamel or metallics, it is claimed that it is yellower and brighter in shade and superior in strength to the best phthalocyanine greens previously marketed. This new product shows no tendency to shift toward blue when ground with steel balls in alkyds as is occasionally the case with "Monastral" Fast Green G Powder. Because of the rather hard texture of "Monastral" Fast Green GX Powder, ball milling is preferred to roller milling as a means of incorporation. While the unique shade and exceptional brightness of the product are retained in printing inks, no strength advantage is evident over existing products. It is stated that the excellent fastness to light, heat and attack by chemical reagents associated with phthalocyanine green is inherent in all applications using "Monastral" Fast Green GX Powder. Current production of the new green is available in powder form only.

* Registered Trade Mark

MONOCHROME BRILLIANT BLUE FBL

(General Dyestuff)

A straight chrome dyestuff especially recommended for dyeing bright navy shades by the metachrome dyeing method, which are claimed to have excellent (7) light fastness and very good fastness to washing, fulling, potting, and carbonizing. Top-chromed dyeings are said to display even better wet fastness than metachrome dyeings.

NAPHTOL AS-L3G

(General Dyestuff)

A substantive Naphtol of the AS series, which is used on cotton, linen, and rayon yarns, stock, and piece goods for the production of strong, bright, yellow shades with superior fastness properties. The shades obtainable with Naphtol AS-L3G vary from brilliant, greenish yellow to burnt orange. Naphtol AS-L3G is said to be used where excellent fastness to repeated laundering and to light are required, as for example, for draperies, curtains, table linen, washable dress goods, anklets, shirtings and beach clothes. Excellent (5) dischargeability permits recommendation of all but one of the combinations for use as ground shades for white and colored discharge patterns on such textiles as drapery, washable-dress and novelty-sports materials when either light or wash fastness must be excellent.

NAPHTOL AS-LT

(General Dyestuff)

A Naphtol of the AS series offered for the production of brilliant reds, bright reddish oranges, deep, strong bordeauxs and bright greenish navies said to be of very good to excellent all-round fastness properties, especially light fastness, on cotton, linen, and rayon. Some of these combinations are most useful because of their deep, dull, color tone with superior light fastness. As a nonsubstantive naphthol, Naphtol AS-LT is recommended primarily for naphtholation and for coupling with selected fast color salts or diazotized bases on a padder. Naphtol AS-LT is recommended by the manufacturers for uses where very good fastness to light or repeated laundering is required, as for draperies, table linen, washable dress goods, work and play clothes. Light dyeings of this naphthol are also sufficiently fast to light for all these uses, except possibly draperies. Excellent (5) dischargeability makes all the illustrated combinations suitable as grounds for white and colored discharges.

NAPHTOL AS-RC SUPRA

(General Dyestuff)

A straight naphthol offered for the economical production of orange, scarlet, red, garnet and navy-blue shades said to be of very good to excellent general fastness properties and especially of better than average light fastness on cotton, rayon and linen. As a naphthol of only moderate affinity for cellulosic fibers it is recommended primarily for application on a padder; development with a fast color salt or diazotized base is also best conducted on a padder. Naphtol AS-RC Supra is recommended by the manufacturers for uses where very good fastness to light or excellent fastness to repeated laundering is required, as for draperies, upholstery, washable dress goods, work clothes and play clothes. Light dyeings prepared with this naphthol are sufficiently lightfast for all these purposes, except possibly draperies or upholstery. Most of the suggested combinations are suitable for plissé finishing or mercerizing, and all are recommended for use as grounds for white or colored discharge patterns.

NATIONAL ACID BRILLIANT RED GL

(National)

A very soluble, level dyeing nondusting acid dye for wool. In pale shades, it produces subdued, bluish pinks; in medium depths rather bright red shades, while in full dyeings a less blue tone prevails. Applied from an acetic acid bath, exhausting, if necessary, with sulfuric acid, it leaves cotton, rayon and acetate effects unstained but dyes nylon practically equal to the wool. It possesses fairly good fastness to light, hot pressing, domestic washing, and mill washing and excellent fastness to steaming, carbonizing, acids, water, sea water and crocking.

NATIONAL ALIZAROL CYANONE BLL

(National)

A versatile chrome dye producing on wool rather subdued reddish-blue shades. This dye can be applied by all three chrome dyeing methods. The shade produced by the bottom-chrome process is appreciably redder, brighter and stronger than when applied by either top-chrome or meta-chrome. The fastness properties when dyed by either the meta-chrome or bottom-chrome process are essentially the same as when dyed top-chrome. This dye is of prime importance as a shading color, especially as a meta-chrome dye, because of the limited number of meta-chrome blues. It is one of the few available dyes suitable for the production of medium and full navies by the meta-chrome process. It possesses good fastness to light, washing and fulling; very good fastness to hot pressing, rubbing and peroxide bleeding, and excellent fastness to water, carbonizing, stoving, potting and steaming.

NATIONAL CARBANTHRENE BROWN BR PASTE, FLAKES

(National)

This anthaquinone vat dye, available in both the paste and convenient flake form, is suitable for application to both cotton and rayon in any stage of manufacture. It reduces readily at 140°F in a moderately alkaline bath to a yellowish-brown leuco and is usually dyed at 120°F. It is also suited for application by the various pigment impregnation methods. National Carbanthrene Brown BR produces reddish-brown shades of excellent fastness to light, washing, perspiration, dry cleaning, hot pressing and sea water. It also possesses excellent resistance to mill processing such as chlorine and peroxide bleaching, stoving, mercerizing, cross dyeing and fulling. Resin finishing for crease resistance yellows the shade slightly but does not affect the light fastness.

NATIONAL CARBANTHRENE GOLDEN YELLOW RK DOUBLE PASTE

(National)

This is a vat dye of the anthraquinone series yielding, on cotton or rayon, fairly bright shades of reddish-yellow. It reduces readily, at 130°F to a blue-red leuco and is applied at 80°F in a weakly alkaline bath. It can be applied, by the reduced bath method, either in hand tubs or machines, to yarn or pieces by the various pigment impregnation methods and, in light shades, by printina. It exhibits good fastness to acids, alkalies, light and hot pressing, very good fastness to washing, mercerizing and crocking and excellent fastness to boiling soap or soda, chlorine, peroxide, stoving, cross dyeing, perspiration, water and sea water.

NATIONAL CARBANTHRENE ORANGE F3R DOUBLE PASTE

(National)

An anthraquinone vat dye producing, on cotton or rayon, moderately bright orange shades of very good fastness to light, mercerizing, acids, alkalies, washing, soda boil, cross dyeing and peroxide bleaching and excellent fastness to boiling soap, stoving, chlorine, perspiration, water, sea water, hot pressing and crocking. It reduces readily, at 140°F in an alkaline bath, to a dull violet leuco and, in this reduced state, it can be applied either in hand tubs or various types of machines. It can also be applied to yarns or piece goods by the various pigment impregnation methods.

NATIONAL CARBANTHRENE YELLOW BROWN 3G PASTE

(National)

This anthraquinone vat dye reduces readily at 140°F, in a moderately alkaline bath, to a red-brown leuco of excellent solubility. When applied to cotton or rayon from a reduced bath at 120°F, or by pigment impregnation, it produces subdued yellowish-brown shades. National Carbanthrene Yellow Brown 3G Paste exhibits excellent fastness to light, commercial laundering, boiling soap, perspiration, water and sea water, dry cleaning and hot pressing. It is practically unaffected by mill processing, such as bleaching, cross dyeing, mercerizing and stoving and may be resin finished for crease resistance, with practically no change in shade or light fastness.

NATIONAL CARBANTHRENE YELLOW FFRK PASTE

(National)

An anthraquinone vat dye of very good solubility and dispersibility. It is reduced readily at 100°F to a dull orange leuco and dyes cotton and rayon from a weakly alkaline bath at 80°F. It exhibits excellent fastness to light, washing, boiling soap, fulling, potting, perspiration, cross-dyeing, water, sea water, peroxide, stoving, acids, chlorine and mercerizina. As its fastness properties indicate, this product is exceptionally well suited for dyeing yarns and fabrics that

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will be subjected to vigorous mill processing and consumer usage.

NATIONAL CARBANTHRENE YELLOW 3GFN DOUBLE PASTE

(National)

An anthraquinone vat dye producing, on cotton and viscose rayon, clear shades of golden yellow. It reduces readily at 140°F to a grey leuco and dyes levelly and uniformly in a moderately alkaline bath at 120°F. This dye possesses superior solubility and dispersability and is highly recommended for pressure dyeing and pad-jig application. It has excellent fastness to all wet processing including boiling soap, chlorine and peroxide bleaching, mercerizing and cross dyeing. Materials colored with this product exhibit good fastness to light and exceptional resistance to the effects of commercial laundering. This dye is also valuable as a component in mixtures producing a variety of rich browns, tans, taupe and beige shades as well as a range of pleasing yellow tones.

NATIONAL CARBANTHRENE YELLOW K PASTE

(National)

An anthraquinone vat dye in nondrying paste form especially recommended for printing. Although primarily used for printing medium to deep bright yellow shades of good light fastness on cottons or rayon, it is also suitable for dyeing by either the pad-jig, pressure or open tub methods. It can be applied by pigment impregnation or reduced at 140°F to a violet leuco and dyed at 120°F in a moderately alkaline bath. National Carbanthrene Yellow K Paste exhibits excellent fastness to commercial laundering, boiling soap, chlorine, acids, alkalies, stoving, mercerizing, cross dyeing, perspiration, dry cleaning, hot pressing and rubbing.

NATIONAL CHROMOLAN BROWN R

(National)

A homogeneous, very soluble, level dyeing, nondusting metallized acid dye, yielding chocolate brown shades when dyed on wool. It has very good fastness to light, mill washing, and scouring, fulling, perspiration, water and sea water, and excellent fastness to carbonizing, steaming and rubbing. This product will be found particularly valuable for the coloring of carpet yarn, knitting yarns for hosiery, sweaters and bathing suits, and also for the better grades of ladies dress goods.

NATIONAL CHROMOLAN GREEN BL

(National)

A nondusting, pre-metallized dye producing, on wool, bluish-green shades of moderate brightness. It is especially suited for dyeing un-neutralized carbonized pieces, and other woolen pieces in a highly acidic condition including materials that have been acid chlorinated. It possesses good lightfastness and very good fastness to steaming, carbonizing, acids, acid perspiration, cold and sea water spotting and rubbing. This product will be found suitable for coloring carpet yarn, knitting yarns for hosiery, sweaters and bathing suits, and also for dyeing ladies' dress goods.

NATIONAL FAST WOOL ORANGE FF

(National)

A nondusting, level dyeing, very soluble acid dye of particular interest to dyers of wool and fur felt hats. This product, in a dyebath acidulated with sulfuric acid, produces, on wool, well penetrated shades of bright orange. It reserves cotton, viscose and acetate fibers practically white, but stains pure silk and dyes nylon slightly yellower than wool. It possesses good fastness to light and very good fastness to cold water bleeding. Hat bodies can withstand overnight immersion in cold water without staining white wool or cotton and with practically no alteration in shade. Woolen piece goods or felt can be carbonized after dyeing as this dye has excellent fastness to either sulfuric acid or aluminum chloride carbonizing.

NATIONAL FAST WOOL YELLOW GL

(National)

A nondusting, level dyeing acid dye of excellent solubility, producing on wool, bright clear yellow shades. Applied to wool from a dyebath acidified with sulfuric acid, this product possesses excellent fastness to light, steaming, hot pressing, alkalies, cold water and crocking. It is well adapted for coloring piece goods such as flannels, ladies dress goods and knitting yarns. It is especially recommended for the dyeing of wool and fur felt hats because of its excellent penetrating and levelling qualities in addition to its above-mentioned fastness to light and cold water. National Fast Wool Yellow GL is also suitable for coloring wool pieces to be discharge printed, as it yields excellent whites with a neutral discharge paste.

NATIONAL MILLING RED BROWN

(National)

A nondusting, very soluble acid brown possessing excellent neutral dyeing properties. Applied to wool from a weakly acid bath it yields full maroon shades of fairly good fastness to light, mill washing and scouring, good fastness to acid, alkali and carbonizing and very good fastness to domestic washing, perspiration and rubbing. It is well suited for application to loose wool, slubbing or yarn, particularly yarns intended for hosiery.

NATIONAL NACCOGENE YELLOW GS POWDER

(National)

A stabilized azoic dye producing, when printed on cotton and rayon, pure greenish shades of yellow. It is perfectly compatible with starch-tragacanth printing paste and has very good stability. This product possesses good lightfastness and very good fastness to rubbing, hot pressing, boiling soap or soda, peroxide bleaching, washing, perspiration and sea water. It can also be printed along with the leuco vat ester dyes such as the National Solvats, for the production of launderable multi-color prints.

NATIONAL ORANGE RF SALT

(National)

A stable diazonium salt of excellent solubility, used to develop the various National Naphthols to varying shades of orange, scarlet, yellow and brown. It can be applied to cotton and rayon in the form of raw stock, yarn or piece goods, in open tubs, pressure dyeing machinery, on the jig or reel, or by the continuous padding method. It is also suitable for printing. The orange shades produced with this product are characterized by brilliance and very good to excellent fastness to light, washing, alkalies and soda boil. National Orange RF Salt is recommended for coloring materials to be used in the production of sport and play clothes or any fabric to be subjected to extremes of wear and laundering. Resin finishing for crease resistance has practically no effect on shade or light fastness of the orange combinations.

NATIONAL RED AL SALT

(National)

A stable diazonium salt derived from anthraquinone, used to develop the various National Naphthols varying shades of red, scarlet, yellow and brown. It can be applied to cotton and rayon in the form of raw stock, yarn or piece goods, in open tubs, pressure dyeing, machinery, on the jig or reel, or by the continuous padding method. This product's salient characteristic is its outstanding lightfastness, being rated very good to excellent for most combinations. Materials colored with this product will withstand vigorous laundering and can be resin finished for crease resistance with practically no change in shade or lightfastness.

NATIONAL SOLANTINE BROWN 3RL

(National)

A nondusting, light-fast direct dye, producing on cotton and rayon bright, reddish shades of brown. It has good solubility and is only slightly affected by metals in the dyebath or by the mercerizing process. Materials colored with this dye possess excellent fastness to light, perspiration, cold and sea water spotting and may be rubberized. It retains most of its lightfastness on aftertreatment with Naccufix or with a combination of Naccufix and urea formaldehyde resin, and in the case of the latter, possesses quite good washing fastness.

NATIONAL SOLANTINE GREY GVF

(National)

A nondusting, exceptionally fast to light direct dye. When dyed in the usual manner for direct dyes, it produces, on cotton and rayon, pleasing shades of blue grey. Dyed on viscose rayon it exhibits excellent fastness to light, perspiration and crocking. Aftertreatment with urea-formaldehyde resin, for crease resistance, in conjunction with National Naccufix results in a marked improvement in wash fastness and no loss in light fastness. Materials thus processed are suitable for use in women's and children's dress goods, suitings, beach and sports wear.

NATIONAL SOLANTINE YELLOW 2RLL

(National)

A nondusting direct dye of very good solubility and very good resistance to metals. It produces on cotton or rayon medium yellow shades, stains silk, wool and nylon, but leaves acetate rayon practically unstained. This product possesses very good to excellent fastness to perspiration, alkalies, water, sea water, crocking and hot pressing and good fastness to light. Its fastness to light is especially noteworthy when used as a component in the production of tan, taupe and gray shades. Materials dyed with this product may be resin finished for crease resistance with practically no alteration of shade or light fastness.

NATIONAL SOLVAT BLUE 4B

(National)

A leuco vat ester dye, producing when dyed or printed on cotton and rayon, bright blue shades. It possesses good lightfastness and excellent fastness to laundering, boiling soap, peroxide bleaching, stoving, cross dyeing, perspiration, dry cleaning, water, sea water and hot pressing. Materials colored with this product may be resin finished for crease resistance with but slight alteration in shade but with a compensating increase in lightfastness. It is rated among those dyes of this class having the highest substantivity for cotton. Although it is of primary interest as a printing and padding dye, it is also applicable by the jig, reel, pressure and open box methods of application. It is quite versatile and has been applied, especially in pastel shades, on wool, silk, mixed fabrics and the new synthetics.

NATIONAL SOLVAT BLUE 6B

(National)

This leuco vat ester dye produces bright blue shades when printed or dyed on cotton and rayon. Although this dye is of primary interest as a printing and padding color, it is also applicable by the jig, reel, pressure and open box methods of dyeing. This product possesses the good light fastness and excellent all round wet fastness properties characteristic of the brominated indigo vat dyes. National Solvat Blue 6B exhibits rather unusual versatility. In addition to its suitability for cotton and rayon, it has been successfully applied to silk, wool, many of the newer synthetics, and leather. It is also often printed along with the stabilized azoics such as the Naccogenes, or on a naphthol prepare in conjunction with diazo printing pastes.

NATIONAL SULFUR BRILLIANT GREEN 5BCF

(National)

A nondusting sulfur dye producing, on cotton or rayon, fairly bright bluish-green shades. It is easily dissolved with an equal weight of sodium sulfide concentrated. National Sulfur Brilliant Green 5BCF possesses fair fastness to acetic acid and cross dyeing, good fastness to perspiration, sea water, water, alkalies, hot pressing and light, and very good fastness to rubbing and stoving. It is suitable for coloring materials that are to be rubberized. Aftertreatment in the usual manner with copper sulfate and acetic acid dulls the shade, but, at the same time, improves the light fastness.

NATIONAL VIOLET BN SALT

(National)

A stable diazonium salt applicable to cotton and viscose rayon by all the printing and dyeing processes generally employed for dyes of this type. It produces a yellow on National Naphthol AS-G bottom and varying shades of violet and bordeaux with the other National Naphthols. Most of the couplings of this product with the various National Naphthols possess very good to excellent fastness to light, washing, soda boil, acids, alkalies and peroxide bleaching. This product is recommended for the printing and dyeing of cotton and rayon materials for sport and play clothes, decorator and other fabrics that are to be exposed to sunlight and vigorous laundering.

NOVANTHRENE BRILLIANT BLUE B

(BASF)

A new homogeneous dyestuff which is offered in paste form and as a dispersed concentrated powder (5:11). Besides its extreme brilliance of shade, it is said to be characterized by ex-

cellent fastness to peroxide, chlorine, washing and soda boil and resistance to sunlight. It can be dyed hot and therefore lends itself for dyeing by the well known continuous dyeing methods. It is suitable for dyeing cotton, viscose rayon and silk.

NYANZA FAST TURQUOISE GL

(Nyanza)

Nyanza Fast Turquoise GL produces a very bright shade of greenish blue on cotton and rayon said to be of very good fastness to light. It has excellent solubility and can be used in all types of matching dyeing. Nyanza Fast Turquoise GL is said to be an excellent color for brightening the shades of ordinary direct blues and greens.

OIL ORANGE #24

(Bick)

A brick red powder, insoluble in water. In alcohol it forms an orange-red solution and crystallizes in glistening red-gold plates or needles. Used for coloring oils, spirit varnishes and gasoline.

OIL RED #258

(Bick)

A dark reddish-brown powder, insoluble in water. Used for coloring varnishes, oils and gasoline.

ORCOCIL BLUE RL

(Organic)

An economical blue for the dyeing of Dacron, to be used where light fastness is not stressed, but where other fastness properties are of importance. The dyestuff reserves cotton and viscose rayon practically pure white.

ORCOCIL DIAZO BLACK B CONC

(Organic)

The use of this color with Orco Developer DEC Special, in a perfected procedure for the dyeing of Dacron, produces a black claimed to be of unsurpassed fastness. By reducing the amount of color and topping the dyeing with Orcocil Red 4BL, a versatile navy with the required overhand is obtained. With a very slight adjustment in the procedure, a black can be effected on a wool-Dacron blend.

ORCOCIL DIRECT BLACK GL

(Organic)

A direct dyeing color for Dacron, to be used where time is an essential factor in production and where light fastness is not emphasized, but where other fastnesses are desirable. Nylon and Celanese are dyed a similar shade, allowing a blend of these fibers to be dyed in the same bath.

ORCOCIL FAST BLUE LGFN

(Organic)

A dyestuff for Dacron, recommended by the manufacturers where extreme all round fastness is required, with special emphasis on a 70 hour Fade-Ometer light fastness and a rating of 5 for sublimation. Celanese and nylon blended with Dacron may be dyed in one bath, the shade on all three fibers being very close.

ORCOCIL FAST BROWN PFLS

(Organic)

A rich yellow brown for producing a shade on Dacron said to possess exceptional fastness in all respects. As in most Dacron shades, light and sublimation fastness are of most importance. These qualities have been kept in mind in the manufacture of this dyestuff.

ORCOCIL FAST BROWN PNLS

(Organic)

A full depth red-brown is obtained on Dacron with this color which, as a comparison shade to Organic's yellow-brown, was perfected to render outstanding performance in dyeing quality and fastness properties.

ORCOCIL FAST RED 2BSL

(Organic)

A color to be used in pastels as a self shade or in a combination in the dyeing of Dacron. It is said to possess a light fastness of 40 Fade-Ometer hours and a rating of 5 for all tests.

ORCOCIL NAVY BLUE FSL

(Organic)

A navy especially developed for Dacron and said to possess the best possible fastness for a shade of this type. With the addition of other suitable colors, a navy on a nylon-Dacron blend can be produced with ease, while the addition of other colors would match a navy on a wool-Dacron blend, all in the same dyebath.

ORCOCIL ORANGE GL

(Organic)

A yellow orange said to have a light fastness of 70 Fade-Ometer hours on Dacron. It can be used very profitably in the making of browns. It is stated that its fastness to prespiration, sea water, dry cleaning, and crocking make it a useful all round color.

ORCOCIL PINK BL

(Organic)

A Dacron dyestuff which, when used in the prescribed method, produces an extremely bright pink of great color value. It is stated that its 50 hour light fastness and maximum general fastness indicate its usefulness in the matching of different shades on Dacron.

ORCOCIL RED 4BL

(Organic)

A red on the blue side which is said to demonstrate the fastness qualities which can be obtained on Dacron. This color is claimed to have maximum ratings on washing, crocking, perspiration, sublimation, sea water, and gas fading.

ORCOCIL RED VIOLET RLS

(Organic)

A general purpose Dacron dyestuff said to possess good fastness qualities in many respects. Since its shade on both spun and filament nylon is close to the shade produced on Dacron, this color can be used to advantage in the matching of shades involving a blend of both synthetic fibers.

ORCOCIL YELLOW 6GLS

(Organic)

An extremely bright yellow on the green side said to possess great color value using Organic's method for the dyeing of Dacron. It is stated that its Fade-Ometer rating of 100 hours and its maximum fastness to sublimation in heavy shade, make it a dyestuff to be considered seriously by every dyer whose customers are emphasizing these important qualities.

PARANOL FAST BLUE FF

(Nyanza)

A new addition to Nyanza's line of Paranol Fast colors which have good fastness to light. It is considerably redder in shade than Paranol Fast Blue 4GL. Paranol Fast Blue FF is claimed to be an excellent color for union dyeing as it dyes cotton and rayon leaving the wool practically unstained. It is stated that Paranol Fast Blue FF has excellent level dyeing properties, good solubility and is suitable for all types of machine dyeing.

PARONAL FAST RED 6BL

(Nyanza)

A direct red said to be of outstanding fastness to light and good fastness to washing. Due to its good solubility, Paranol Fast Red 6BL is suitable for all types of machine dyeing. As Paranol Fast Red 6BL is said to be characterized by extreme fastness to light, it is of interest for dyeing goods which are subsequently "crease-proof" finished. It is also of interest in union dyeing as it dyes the vegetable fibers leaving the wool practically unstained.

PHARMA CHROME BLUE R

(Pharma)

A very bright, reddish shade for dyeing wool by the normal chrome methods. The deepest shade is obtained by the bottom chrome method. The wet properties are said to be excellent. The product may also be used for chrome printing.

PHARMANTHRENE GOLDEN YELLOW GK DOUBLE PASTE

(Pharma)

A bright golden yellow vat dye of the anthraquinone group. The product gives clear, smooth prints on cotton and viscose rayon by simple conventional methods. It is stated that its high tinctorial power and excellent properties make it a very desirable product for high grade work.

PHARMANTHRENE PRINTING BLACK R

(Pharma)

A vat printing paste of the Indigoid series. The product gives deep shades of black economically on cotton and viscose.

PHARMASOL BROWN IPT

(Pharma)

This is a concentrated stable solution of the Pharmol Brown IPT powder of easy application with the same properties as the powder.

PHARMASOL RED C

(Pharma)

Similar to Pharmasol Red 2BN, but possessing improved fastness to light.

PHARMASOL SEAL BROWN P

(Pharma)

Similar to Pharmasol Seal Brown, yielding a slightly darker brown of easier application as no chromate addition is necessary.

PHARMOL BLACK G

(Pharma)

Yields a greenish shade said to possess excellent fastness to light, washing and chlorine. It is resistant to formaldehyde fumes and can be printed alongside resin bound pigments for Plissé printing.

PHARMOL BLUE 2B

(Pharma)

Yields a bright navy blue said to possess improved fastness to light and excellent fastness to washing. Suitable for Plissé printing. Not sensitive to formaldehyde.

PHARMOL BROWN IPT

(Pharma)

Yields an attractive brown shade said to possess very good all-around fastness properties. Not sensitive to formaldehyde, suitable for Plissé printing.

PHARMOL GOLDEN YELLOW RR

(Pharma)

Yields a very strong golden yellow of slightly redder cast than Golden Yellow R. Suitable for Plissé printing, it also is said to possess very good all-around fastness properties. After coupling, it resists hydrosulfite treatment.

PHARMOL GREEN GN

(Pharma)

This product fills the last gap in Pharma's azoic line. It is of moderate fastness to light and possesses very good fastness to washing. It yields a dark green.

"PONSOL"® RED FG PASTE

(Du Pont)

A valuable addition to the range of Du Pont anthraquinone vat dyes, especially for the production of pink and rose shades on cotton and rayon. This new product yields bright, yellowish-pink shades said to possess very good light fastness. After exposure in the Fade-Ometer or sunlight it fades yellower and duller. "Ponsol" Red FG Paste has good resistance to the effects of chlorine and washing and is recommended for use in light shades on dress goods, suitings, drapery and upholstery fabrics, sewing threads and similar items. It is of especial interest as a shading component in the production of fast-

to-light grey, beige and tan shades. "Ponsol" Red FG Paste shows a yellower and brighter shade change under artificial light. "Ponsol" Red FG Paste reduces readily with caustic soda and Du Pont Hydrosulfite Conc and shows very good stability in the reduced form for 2 hours at 120°F, for 1½ hours at 140°F, and for 1 hour at 190°F. The color has excellent build-up, shows reasonably good transfer properties and can be applied to cotton and rayon by customary dyeing procedures. It is also suitable for the printing of light drapery shades. "Ponsol" Red FG Paste can be applied to cotton packages by either the pigment or reduced method. On packages of spun rayon the color exhausts quite rapidly and it is suggested that the dyeing procedure be carefully controlled to obtain level dyeings.

* Registered Trade Mark

"PONSOL"* BLACK BFB DOUBLE PASTE

(Du Pont)

An anthraquinone type vat color that produces bright, blue shades of black after oxidation on cotton, and slightly redder shades of black on rayon. Light fastness of the color in full shades is said to be close to 320 hours (Fade-Ometer) and is accompanied by a monotone fade at all concentrations. "Ponsol" Black BFB Double Paste is recommended for dyeing yarns in beam, package and warp form. It is also of interest for hosiery dyeing. Yarns dyed with this color can be exposed satisfactorily to continuous peroxide bleaching. Consequently, it is used for ginghams, chambrays and checks. "Ponsol" Black BFB Double Paste has very good solubility and possesses the necessary physical properties that enable it to be used by pigment application for padding and in package and beam dyeing equipment. The color has good stability in the reduced form at both 120°F and 140°F, showing a trace to noticeable dullness after standing for two hours. "Ponsol" Black BFB Double Paste is green in shade before development with sodium nitrite and sulfuric acid, which produce its full black shade.

* Registered Trade Mark

"PONSOL"* YELLOW PG DOUBLE PASTE

(Du Pont)

An anthraquinone type vat color very close in shade to the standard Spanish yellow. It is suitable for application to both cotton and rayon in the form of yarn and piece goods and because of its particularly good fastness to washing is recommended for materials intended for work clothing, towelings, sheetings, and similar items. Good fastness to chlorine, peroxide bleaching, hot moist pressing, crocking and water spotting are said to render this product valuable for the above end uses. "Ponsol" Yellow PG Double Paste will also find use as a shading component in mixtures where added brightness is desired, and as a base for rich brown and orange shades. "Ponsol" Yellow PG Paste has excellent stability when reduced at 120°F. At 140°F the stability is good although the shade of the reduced vat becomes slightly redder and duller. The color is suitable for application by pigment, reduced, or continuous methods. "Ponsol" Yellow PG Double Paste exhibits very little sensitivity to changes in temperature or concentrations of caustic soda. Metals have a negligible effect on the shade. Under artificial light the shade appears redder, while soaping effects a noticeably brighter shade.

* Registered Trade Mark

PYRAZOL DISCHARGE ORANGE 3LG

(Sandoz)

The maker reports this new direct dye to be most outstanding for sunlight fastness, rating (L-6) at only .25% depth. This excellent light fastness is increased if dyeings are treated with urea-formaldehyde. It reserves nylon very well, leaves acetate a pure white and dyes wool very much lighter than cotton or rayon. These "reserving" features, plus its extreme light fastness, recommends its use for automobile and other upholstery fabrics. As its name implies, it gives white discharges both neutral and alkaline.

PYRAZOLINE ORANGE GFL

(Pharma)

A substantive color for both cotton and viscose rayon. The feature of this product is said to be its unusually high light fastness, L7 on viscose rayon and L6 on cotton. The product gives white discharges, both neutral and alkaline. Perspiration and soft water fastnesses are said to be excellent and wash fastness and salt water fastness to be good. When after-treated with urea formaldehyde resin, the light fastness improves slightly.

PYRAZOLINE RED 3BW

(Pharma)

A substantive shade for cotton and viscose rayon, leaving acetate, nylon, silk and wool white. The general dyeing properties and fastness qualities are said to make this product a useful addition to the dyer.

RAPIDOGEN BLACK ITA

(General Dyestuff)

A straight stabilized azoic composition in powder form recommended for printing black and grey shades said to be characterized by better fastness to light and to washing than obtainable with the regular azoic types of black. It is also claimed to stain whites less in soaping and to be suitable for caustic overprinting. Prints of this black are developed only in acid aging.

RAPIDOGEN BLUE PBN DOUBLE SOLUTION

(General Dyestuff)

A straight, stabilized, azoic composition in already-dissolved form recommended for the preparation of printing pastes for the screen and roller printing of economical strong blue and navy shades of excellent (5) wash-fastness on cotton and rayon. Prints are said to be suitable for caustic overprinting and to display good-to-very-good fastness to chlorine. Prints are developed in acid aging.

RAPIDOGEN BORDEAUX RN SOLUTION

(General Dyestuff)

An azoic printing dyestuff in convenient solution form ready for mixing into printing pastes for printing cotton and rayon. This new brand is equal to the old powder form in printing characteristics, being developable in either acid or neutral aging. This new type is said to give the same strong bright Bordeaux shades as the old type with the same fastness properties, including good fastness to light, very-good-to-excellent (4-5) fastness to washing and good-to-very-good (3-4) fastness to 0.3% active chlorine.

"RORACYL"* BLACK N
"RORACYL"* NAVY BLUE N

(Du Pont)

Two new acid-types designed primarily for pressure dyeing of both types 41 and 42 "Orlon"* acrylic fiber. They are said to possess particularly good fastness to light with very good fastness to wet processing in general. It is stated that they are both level dyeing and can be used as self shades or shading components in the production of dark browns.

* Registered Trade Mark

SAFARITONE* ACETATE COLORS

(Hilton-Davis)

SAFARITONE YELLOW G PASTE
SAFARITONE YELLOW 4RL PASTE
SAFARITONE ORANGE GR PASTE
SAFARITONE SCARLET B PASTE
SAFARITONE RED 2G PASTE
SAFARITONE RUBINE B PASTE
SAFARITONE RUBINE 3B PASTE
SAFARITONE BLUE FFR PASTE
SAFARITONE BROWN 5R PASTE
SAFARITONE BLACK BNF PASTE

Safaritone Colors are acetate dyes for the dyeing of acetate, nylon, and other synthetics. These colors are extremely fine dispersions supplied in a paste form. The highly dispersed pastes eliminate the necessity for pasting with soap before dyeing and eliminate the dusting problem with dry powders. The finely divided form of the dye particle makes the colors more suitable for circulating machine dyeing of synthetics.

* Registered Trade Mark

SETACYL YELLOW 3RN

(Geigy)

It is said that this fairly bright reddish shade of yellow possesses exceptionally high all around fastness properties on all types of acetate and nylon. The resistance to light, washing and atmospheric fading is said to be exceptionally good. This new product is also said to have very good dispersibility and to draw well at medium temperatures making it well adapted for jig as well as reel dyeing. It is also said to be suitable for use as a self shade on nylon and on acetate fabrics as well as in combination with other Setacyl colors to produce mode shades on bathing suits, ladies' wear and draperies.

SPECTROSOL* COLORS

(Hilton-Davis)

SPECTROSOL YELLOW GN
SPECTROSOL YELLOW GS
SPECTROSOL ORANGE R
SPECTROSOL SCARLET R
SPECTROSOL RED G
SPECTROSOL RED AS
SPECTROSOL RED KB
SPECTROSOL RED GB
SPECTROSOL RED RG
SPECTROSOL RED GBS
SPECTROSOL RED GC
SPECTROSOL RED RC
SPECTROSOL RED OL
SPECTROSOL RED RA
SPECTROSOL WINE R
SPECTROSOL BROWN B
SPECTROSOL BLUE AS
SPECTROSOL BLUE D
SPECTROSOL BLUE PB
SPECTROSOL BLUE B

Stabilized azoic compounds prepared especially for the printing of cotton and rayon fabrics. Spectrosols are combinations of Spectrolenes* and Hiltonaphthol Solutions which by their shade fastness and working properties are said to have proven to be the most valuable to the textile printers. Spectrosols are supplied in solution form for ease of handling in the drug room

* Registered Trade Mark

SPECTROSOL* RAVEN BLACK B POWDER

(Hilton-Davis)

A stabilized azoic compound prepared for the printing of black shades on cotton and rayon. It is stated that fastness properties are good with excellent fastness to light and wet processing and good fastness to chlorine. Furnished in powder form, this product is noted for its ease of solubility in preparing print paste. In combination with Spectrosol Orange R this black produces pleasing brown shades.

* Registered Trade Mark

SUPRALAN YELLOW NR
SUPRALAN ORANGE NR
SUPRALAN BORDEAUX NB
SUPRALAN VIOLET NR
SUPRALAN BLUE NB
SUPRALAN BROWN NR
SUPRALAN BROWN NY

(General Dyestuff)

A series of new, straight, water-soluble metalized dyestuffs not containing free sulfonic acid groups, which are said to be characterized by being applicable with very good levelness on wool from a nearly neutral dyebath. They are claimed at the same time to give superior fastness properties on wool, the fastness to light, washing, fulling, carbonizing, and perspiration all being said to be very good to excellent. They are therefore recommended for use on knit goods that are to be shrinkproofed and especially for certain styles of fabrics for which the long boiling of fast chrome dyestuffs impairs the texture and quality of the wool more than is desirable. The Supralan dyestuffs are also claimed to dye easily on spun nylon in nylon-wool blends because they are free from the blocking effects of free sulfonic-acid groups. They are said at the same time to leave rayon and acetate effects quite clean (4-5 or 5). Since they leave barré effects on filament nylon, however, they are not recommended for filament-nylon piece or knit goods. The fastness properties on nylon are claimed in general to be quite good, that is, good to excellent in light, washing, perspiration, sublimation, and crocking fastness.

See pages 809-810 for manufacturer's addresses

SUPRANOL BROWN 3GL-CF

(General Dyestuff)

A straight acid dyestuff for dyeing shades said to be of very good fastness on wool and also on silk and nylon. It is characterized by good affinity for all these fibers from neutral solution. It is stated that the self shades of this brown on wool display not only very good fastness to light, to various wet influences, and to wear in general, but they resist mild fulling on fabrics that are often dyed with chrome dyes. Supranol Brown 3GL-CF, because of its very good all-around fastness, is recommended by the manufacturers for use on wool that goes into those items of better quality that will receive a mild fulling and for which very good but not maximum light fastness is sufficient, such as carpet yarns, women's wear, overcoating, knitting yarns, blankets, and bathing suits. In such work it is avantageously combined with Alizarine Fast Grey BBLW and Anthraquinone Violet D for the production of beige, taupe, camel-hair and other light shades of very good fastness. It may also be used for shading chrome dyeings. The shade and fastness properties of Supranol Brown 3GL-CF are about the same on silk as on wool, that is, this product can be employed for fast-to-light dyeings on silk said to possess good fastness to mill washing and excellent fastness to home washing. The yellowish-brown tone of this dye is of special value for mode shades on silk. Supranol Brown 3GL-CF builds up quite well on nylon to give yellowish browns very similar in tone to those on wool. Of particular advantage for light to medium shades on mixed fabrics containing spun nylon and cellulosic fibers is that it dyes nearly as well from a neutral as from an acid bath and leaves cotton and rayon clean. As might be expected from a Supranol dye, the wet fastness on nylon is better than that of the Cellitons, and the fastness to light is about the same as on wool and silk.

VIALON FAST CLARET R
VIALON FAST COPPER R

(BASF)

These two colors are important additions to the range of Vialon Fast colors. They are said to possess all around fastness on nylon and, like the other colors in the Vialon Fast range, dye nylon and wool from a neutral bath. They are also suitable for dyeing Dynel, where they are said to possess excellent all around fastness, particularly to light. They also yield very fast shades when printed on nylon.

XYLENE FAST ORANGE P

(Sandoz)

The newest addition to the series of "P" colors recommended by Sandoz which all dye with a similar rate of absorption and exhaustion. They report that Xylene Fast Orange P, like other colors in this series, is best dyed at a pH of 5.6-5.8 under which conditions these colors have a leveling property equal to the best sulfuric-acid-dyeing brands. Xylene Fast Orange P is recommended for the dyeing of yarn or piece goods where improved wet fastness, as well as good light fastness is desired. Also recommended for nylon and nylon/wool blends.

TEXTILE CHEMICALS

ACCELERATOR R

(Warwick)

A water-soluble catalyst which has been found to be very effective for curing formaldehyde-nitrogen resins in the presence of silicone water repellents in the same treating bath.

AHCOFIX 134

(Arnold, Hoffman)

A new, copper-free direct dye fixative, especially formulated for use in anti-crease resin formulations when an increase in wash and wet fastness is desired. Exceptionally good stability in resin baths. Ahcofix 134, used in wet processing, is said to prevent dye bleed-off, and when applied to cotton or rayon goods prior to drying, to increase wet fastness and minimize migration.

AHCOFIX S

(Arnold, Hoffman)

A new, copper-containing direct dye fixative with superior substantive properties. Yarn and piece goods dyed with colors selected from a wide range of directs and aftertreated with Ahcofix S, are said to show a considerable increase in washfastness, and to become extremely fast to perspiration, hot or cold water treatments, and pressing, dry or wet. Methods of application are simple and quite flexible.

ALPHASOLVE CQ

(Amalgamated)

A poly-amino carboxalic acid salt used in sequestering various salts such as calcium, magnesium, iron, copper, etc. It is particularly useful in dyeing where metallic salt will adversely affect shade. It is said to facilitate dispersion of dyestuff and help rule out streaky dyeings and shade changes. It is said to be particularly effective in vat and naphthol dyeing with marked enhancement in crockfastness and color yield and brightness. It is used to advantage in the soaping operation; in sulfuric blanks for example, it prevents bronzing. It is especially recommended in package, raw stock and beam dyeing. It prevents film or scum forming on the metal of the dyeing machine during its operation.

ALUBRAGUM

(Jordan)

Known cremically as sodium polyacrylate, Alubragum is a resinous chemical said to be of high effectiveness as a synthetic and natural latex thickener. Alubragum is manufactured in two forms, Alubragum 402 and Alubragum 825. Alubragum 402 is so formulated that its maximum effectiveness takes place with high concentration of latex as a base, whereas Alubragum 825 exhibits its maximum efficiency in low concentrations of latex as a base. Alubragum is noted for its remarkable thickening ability and the smoorn end product it affords the user.

ALUBRASOL

(Jordan)

An anionic finishing agent supplied in a paste form. It is said to be effective on all fibers imparting full body and excellent softness. Alubrasol may be used alone or in conjunction with resins, urea, starch and many other chemicals. It may be applied in a Tube-Tex machine, aye beck, package machine, padder, jig or other finishing equipment. Alubrasol is principally noted for its yellow inhibiting properties on bleached whites after aging.

AMPITOL 35D

(Dexter)

Substantive softener which produces a soft, silky hand on acetate, viscose, nylon and other synthetic fibers. Cationic in nature, this finish is claimed to improve the cutting and laying up properties and to help control static electricity. It is said to resist dry cleaning and washing when applied in either the dye beck as a final rinse or by pad.

ANALON

(Hart)

An anionic substantive softener applicable to all types of textile fabrics. Analon is used advantageously for broadcloth shirtings and cotton underwear materials, where needle cutting on high speed sewing machines must be minimized or eliminated. This softener is said to assure a durable, soft and pliable hand on rayon acetate, cotton and silk. It is stated that Analon has no effect on the shades or light fastness of dyed goods or prints, will not discolor white fabrics regardless of concentration and the softening properties are resistant to laundering and dry cleaning. Analon is a soft white paste having a pH of approx 9.

ANTHRAPENE PN

(Arkansas)

Primarily a wool dyeing assistant which is said to combine outstanding leveling properties with excellent wetting efficiency. It is particularly suitable for applications which require rapid and complete penetration of the dye liquor, together with the production of a full uniform shade. When used with metalized dyes, it is stated that the amount of acid in the bath may be reduced with resulting improvement in the evenness of the dyeing, and more complete exhaustion of the dye bath. For most efficient results, the goods are pre-treated with Anthrapene PN (0.5% to 1.0% on the weight of fiber), in the presence of acetic acid for 10 to 15 minutes, before the addition of the dyes to the bath. It should be noted that the presence of alkalies and anionic agents, such as soap and alkyl aryl sulfonates, are incompatible with Anthrapene PN and must be removed by neutralization or rinsing, if present, before proceeding with the dyeing process. In appearance, Anthrapene PN is a dark amber viscous liquid having a pH of about 5.5, and is readily soluble in warm water.

ANTI-STAT SW

(Arkansas)

An agent said to be of proven value for the purpose of minimizing the accumulation of static charges on synthetic fibers such as acetate, Dacron, nylon, and Orlon. For most applications it is necessary to use 1.% to 2.% of this product, on the basis of the bath, to obtain optimum results. In some applications, it may be mixed with a lubricating agent such as a self-emulsifying oil, or with a final finish to avoid an extra operation. In ths connecton, the compatiblity should always be checked preliminary to its actual use. In using Anti-Stat SW, it is always desirable to make a pre-mix of this product with hot water before its final addition to the application bath. In physical appearance, Anti-Stat SW is a firm paste of a light tan color, which is essentially non-ionic in character. The pH of a water solution is in the range of 9 to 9.5, and when used with products which are on the acid side, such as cationic finishes, it is desirable to adjust the pH of Anti-Stat SW to approximately neutral in the preliminary mix before use. Anti-Stat SW is available at a 50.% paste and, also as a 100.% anhydrous wax. It is also available in solvent media for special applications.

AQUAGARD*

(Soluol)

An aqueous silicone resin emulsion for imparting durable water-repellency. It is stated that it withstands repeated washing and drycleaning and that it can be employed in conjunction with urea or melamine-formaldehyde resins. Applicable to practically all fibers and fabrics, both natural and synthetic.

* Registered Trade Mark

AQUAPEL*

(De Paul)

The product is designed to be applied by textile finishers to provide a water repellent finish which is said to be extremely durable to drycleaning Aquapel is a water repellent which in its physical appearance is a translucent thin liquid with a faint formaldehyde odor. It is so constructed that in its application it has excellent penetration. For its curing, De Paul has developed a catalyst which will help insolubilize the water repellent. It is not recommended that other finishes should be used in conjunction

See pages 809-810 for manufacturer's addresses

with this water repellent. The drying of these emulsions are similar to the drying of U F resins.

* Registered Trade Mark

ATCO HYDROFOAM

(Metro-Atlantic)

A Silicone base defoaming agent, which is said to effectively eliminate excessive buildup of foam from any textile finishing or dyeing bath. The produce is used in very low concentrations; therefore, there is practically no danger of contamination. Atco Hydrofoam is usually mixed with the other ingredients of the finishing bath and pre-dispersed before adding it to the mix. It is readily dispersible in warm water however, and can be added to the finishing or dyeing formulation at any point where excessive foam causes difficulty.

ATCO REZ SOFT

(Metro-Atlantic)

A cationic softening agent manufactured for use in conjunction with thermo-setting resins. It acts as a softener and plasticizer to impart durable softness to resin finishes without affecting crease resistance or stabilization. Atco Rez Soft is readily soluble in water. The product will not cause discoloration of whites even at high temperatures, and it has no tendency to cause odor development. The product is compatable with nonionic and cationic finishing agents, dilute solutions of acids, and electrolites.

ATCODRI TSN

(Metro-Atlantic)

A low viscosity aluminum salt, wax emulsion which is said to combine ease of handling with excellent water repellent properties The product is readily dispersible in water at any temperature with moderate agitation No pre-mixing is required to produce a uniform padding bath. Dilutions of the product have excellent bath life. Atcodri TSN has no tendency to scum on standing and fabrics properly processed show a minimum of mark off. It is recommended by the manufacturers for any fabric, where high spray ratings and resistance to hydro-static pressure are required.

ATCODRI Z

(Metro-Atlantic)

A one-package zirconium base water repellent which is said to impart excellent spray ratings to all textiles with practically no change in hand in the treated fabrics. It is especially recommended by the manufacturers for use on acetate, nylon, and other synthetic fabrics to produce excellent water repellency with considerable resistance to both laundering and dry cleaning. This one-package product is said to produce results which compare favorably with those previously obtained with two-package systems. Atcodri Z is a free-flowing emulsion which is readily miscible with water. Dispersions of the product are stable and show a minimum of scum even after prolonged standing. Running temperature is not critical, excellent results can be obtained over a range of 120 to 180°F.

ATCOTONE WG PASTE

(Metro-Atlantic)

A highly concentrated TiO_2 dispersion for pigment white applications an dfor delustering filament rayon, acetate, and other synthetic fabrics. The product is a viscous slurry, which is readily dispersible in water at any temperature. Dilute dispersions of Atcotone WG Paste are said to show a minimum of sediment on standing, and to have excellent covering power.

ATOLENE NR

(Dexter)

Wetting agent, dye-leveller and dye bath lubricant without any re-wetting properties, which is of extreme importance when the goods are to be processed with water repellents. When only wetting and dye-levelling is required, 1 to 2% of Atolene NR on the weight of the goods is suggested. When lubrication to prevent bruise marks on heavy rayons and acetates is necessary, 2 to 3% on the weight of the goods should be used with even a higher percentage in the case of exceptionally heavy fabrics. This agent is said to remove the danger of re-wetting even if some is carried over from the dye bath.

AULABRITE* BRILLIANT SILVER POWDER 270X15

(Aula)

An aluminum alloy flake pigment of exceptional brilliance suitable for use with Aulabrite Bronze Clears 888 and 889.

* Registered Trade Mark

AULABRITE* EMULSIFIERS Q AND T

(Aula)

A dispersion of suitable emulsifiers recommended as additives in the preparation of certain Aulabrite Extenders

* Registered Trade Mark

AULABRITE* EXTENDERS
103-LC, 156-LC
301-R, 302-R, 303-R, 304-R, 311-R, 353-R, 354-R, 355-R, 358-R, 359-R, 360-R, 361-R, 363-R, 369-R, 377-R
501, 502, 503, 512
609-NCr, 611-NCr, 612-NCr, 613-NCr, 618-NCr

(Aula)

Ready-for-use extenders to be used with Aulabrite Colors.

* Registered Trade Mark

AULABRITE* EXTENDER CONCENTRATES 710, 791, 792, and 795

(Aula)

Oil-in-water resin dispersions for use in the preparation of Aulabrite Extenders to be used with Aulabrite Colors.

* Registered Trade Mark

AULABRITE* LOW CROCK ADDITIVES 733, 734

(Aula)

Oil-in-water resin and elastomer dispersions recommended as an additive to Aulabrite Colors to result in prints with exceptional resistance to crocking.

* Registered Trade Mark

AULABRITE* LUBRICANT 201

(Aula)

A solvent dispersion of a wax to be used as an additive to Aulabrite printing colors whenever increased lubricity of the printing pastes is desired.

* Registered Trade Mark

AULABRITE* PENETRANT H

(Aula)

A poly-hydroxy alcohol recommended for use with Aulabrite printing colors to increase their penetration and fastness properties to acetate rayon fabrics.

* Registered Trade Mark

AULABRITE* PENETRANT T

(Aula)

A terpene derivative recommended for use with Aulabrite printing colors to increase their penetration and fastness properties particularly on rayon and acetate rayon fabrics.

* Registered Trade Mark

AVCOSET* WS

(American Viscose)

A water-soluble cellulosic ether used in combination with formaldehyde to impart durable dimensional stability to rayon and rayon blended fabrics. Compatible with a variety of finishing agents, combinations of which will give durable multiple finish effects. Easily applied on conventional finishing equipment.

* Registered Trade Mark

AVCOSOL* 150

(American Viscose)

A low viscosity mineral oil base preparation designed to provide high lubrication, normal fiber cohesion and excellent anti-static properties. This product may be used as a coning oil or as a fiber lubricant to assist spinning into yarn. It is applied neat on single-end sizing equipment or in emulsion form to stock prior to spinning. Being emulsifiable, it is easily removed during fabric finishing. Treated yarns will show improved knitting and weaving qualities.

* Registered Trade Mark

AVCOSPIN* A

(American Viscose)

A highly compatible, synthetic lubricant-softener-antistatic agent for dyed fibers, yarns and fabrics. Especially developed for use on nylon, acetate, acrylic and polyester fibers. A self-emulsifying paste designed to produce emulsions with low viscosities, to insure ease of handling and to keep moisture addition at a minimum. Stable emulsions may be sprayed on stock-dyed fibers prior to carding or added to the last rinse after dyeing. Yarns dyed in skein and package form may be treated in the kettle or during winding. It is stated that it will not volatilize from treated stocks during ordinary processing and does not discolor or turn rancid on storage.

* Registered Trade Mark

"AVITEX*" NA

(Du Pont)

A new cationic softening agent developed for use on synthetic fibers to improve hand and pliability. It is also said to be applicable as an antistatic agent and greatly enhances fabric sewability. The finish imparted by "Avitex" NA is resistant to discoloration caused by heat and light encountered in mill application, fabric storage and consumer use.

* Registered Trade Mark

"AVITEX*" FA

(Du Pont)

A textile processing agent that was especially developed as an exhausting agent when applying "Zelec" DX to synthetic fibers. While it gives excellent exhaust efficiency it produces a finish with a somewhat tacky, nonresilient hand. This is readily overcome by giving the goods an aftertreatment in a dilute "Duponol*" LS Paste surface active agent bath.

* Registered Trade Mark

"AVITEX"* FB

(Du Pont)

An improved exhausting agent for the application of "Zelec*" DX durable antistatic agent to the synthetic fibers. It is said to import a soft, dry, nontacky finish with an excellent antistatic effect. "Avitex" FB permits the application of 3.0% "Zelec" DX while achieving a desirable hand. This amount should be applied wherever practical so as to obtain an antistatic finish with the optimum degree of laundering durability.

* Registered Trade Mark

BLACK-OUT No. 11

(Burkart-Schier)

Said to be a new and greatly improved carbon, grease and iron stain remover. It is stated that when applied as directed it will remove deeply embedded stains considered virtually impossible of removal and will often convert seconds to firsts. It yields a half bleach or semi-bleach. The product contains no oxalic acid or oxalates and is reported safe on all fibers tested.

BLANCOPHOR* CN-76

(Antara)

A new optical whitening agent for application on cellulosic fibers. It is applied to cotton or viscose rayon by either padding or from a long liquor. This product is substantive to cellulosic fiber yarns from an alkaline medium. Blancophor CN-76 is stable in powdered perborate bleach formulations. It is stated that cellulosic fiber treated with Blancophor CN-76 do not become yellow during subsequent bleaching with chlorine.

* Registered Trade Mark

BLANCOPHOR* FF

(Antara)

A new highly water-soluble optical whitening agent designed primarily for application on wool, nylon and acetate rayon. This fine fabric brightener produces blue-violet brilliancy on white yarns and piece goods and can be applied either from a long liquor or by padding. Blancophor FF is recommended by the manufacturers for addition to dyebaths to give improved brightness of shade on wool, nylon, acetate rayon and mixed fiber materials. It can also be applied in combination with urea or melamine formaldehyde resin finishes.

* Registered Trade Mark

BOUQUET No. 21616

(Fritzsche)

An attractive perfume for use in textile finishing oils.

BUCIRIS No. 1

(Burkart-Schier)

A bonding agent for nonwoven fabrics which is said to yield maximum strength coupled with high absorbency for both water and oil or grease. Its recommended concentration is 25% binder solids on the weight of the web.

CACHALOT* M-33

(Michel)

Technical grade cety-oleyl alcohol. Starting point for the preparation of textile chemical specialties. For example, may be sulfonated to produce a low-foaming penetrant and detergent. White, semi-solid fatty alcohol with a titre of 33°C.

* Registered Trade Mark

CARRIER No. 514

(Apex)

Swelling agent for dyeing Dacron, nylon and other synthetic fibers without using pressure equipment. It is claimed that it has excellent penetrating action on tight constructions, that it does not sublime and does not leave residual odor or toxicity on treated goods, that it will not deluster acetate, and that it can be used on many types of blends.

CATALIN* RESIN 8171

(Catalin)

A urea-formaldehyde resin of low molecular weight for application to cotton and rayon goods. It is said to impart very good crease resistance and shrinkage control without materially affecting the hand. Catalin Resin 8171 can be shipped in bulk and therefore overcome the handling difficulties encountered with paste type resins.

* Registered Trade Mark

CATALIN* RESIN 8174

(Catalin)

An emulsion of a modified, low molecular weight urea-formaldehyde resin for application to cotton and rayon goods It is said to impart very good abrasion and crease resistance as well as shrinkage control and improved tensile strength.

* Registered Trade Mark

CATALYST SCI

(Warwick)

A self emulsifying liquid catalyst for curing of silicone water repellents.

CHARLAB KSB CLEANER

(Charlotte)

A cleaner for removing polyvinyl acetate, urea formaldehyde, alkyd, and other resins after they have been set up on tenter clips, dry cans, rolls, etc. It is a heavy-bodied paste that is brushed over the resin and allowed to remain from two to four hours after which it is removed with heavy brushing. It is stated that this product has been successfully tested in a number of mills. Further information and samples are available.

CHEMIGUM LATEX 245 CHS*

(Goodyear)

The nitrile latex for the rug backing industry. This aqueous dispersion of a butadiene/acrylonitrile copolymer is easily formulated into a grease and solvent resistant film—a film that is said to lock the weave, hold the tufts and improve the hand. The high solids content of this latex is designed to give maximum solids pick up and maximum economy in shipping and storage. Excellent acid salt tolerance and mechanical stability are said to be obtained by the inclusion of a synthetic anionic stabilizer. Also included in this latex is a nonstaining antioxidant to provide for good aging characteristics. For those conditions when a greater stiffness is desired, the addition of a Pliovic Latex is recommended.

* Registered Trade Mark

CIBALAN* SALT N

(Ciba)

A nonionic dyeing assistant especially recommended by the manufacturer for use with their Cibalan dyes to obtain maximum levelness and penetration and to improve the appearance of the dyed material. It may be used on raw stock, slubbing, yarn and piece goods containing wool, silk or nylon.

* Registered Trade Mark

CITRAZINIC ACID (CZA*)

(Pfizer)

Citrazinic acid is a multi-functional pyridine derivative. It will undergo coupling reactions with diazotized aromatic amines and substitution reactions at nuclear and carboxylic hydroxyl groups. The compound will undergo substitution reactions such as halogenation at available positions on the pyridine nucleus. The readily prepared 2,6 dichloro derivative is especially versatile leading to the formation of many mono and disubstituted products. Citrazinic acid is suggested for use as an intermediate in the preparation of dyestuffs and other complex synthetic organic molecules containing the pyridine moiety.

* Registered Trade Mark

COLGATE CONVERTER SOAP

(Colgate-Palmolive)

A neutral sodium soap in granulated form, made from high purity distilled fatty acids—modified to provide a 36° titer. Contains 90% anhydrous soap. This soap is recommended for detergency operations where intermediate water temperatures are employed.

CONCAMINE 35

(Continental)

A low priced cationic softener said to have practically no effect on light fastness or whites. Especially recommended by the manufacturers for package dyeing.

CONCO DACROSIST

(Continental)

A new and effective dye assistant and vehicle for dyeing of Dacron or mixtures which is self emulsified and which is said to give good wetting, dyeing and levelling to the fabric.

CONCO FILLER T

(Continental)

An extremely full firm hand nonslip, nonfoaming and economical. Recommended by the manufacturers for low count fabrics requiring a substantial build up.

CONCO FINISH 93

(Continental)

A soluble resin finish for all fibers, designed to give great fullness and body, withal on the soft side, and claimed to have superior nonslippage properties.

CONCO NYSCOUR V

(Continental)

A graphite and loom grease cleaner which is said to be practically solvent free, particularly for laces, nettings, veilings and woven fabrics to obtain cleaner and whiter whites.

CONCO REPELLANT SR

(Continental)

A durable water repellent, in form an emulsion of polymerized silicone resins which combines easily with urea, melamine and other resins for wrinkle and crease resistance. When used alone on acetates, a full hand, better sewability and needle resistance is said to be obtained.

CONCO SEQ-W

(Continental)

An organic sequestering agent complexing calcium, magnesium, iron, copper, etc., and said to eliminate the problems of hard water, crocking and making dyeings brighter; stable and effective in an alkali or acid media.

CREAMSOL EXTRA

(Burkart-Schier)

A new substantive nonyellowing softener that is said to be ideal for white goods but equally well suited for dyed goods. It is a semi-fluid and easy to dissolve and apply. Not cationic.

DECETEX 102 EMULSION

(Dow Corning)

Developed for use as a stain resistant and softening finish for textiles, DeCetex 102 Emulsion is a water dilutable emulsion containing 40% silicone solids. Fabrics treated with this silicone finish are said to have a permanent, extremely soft hand and to exhibit improved sewability plus increased tear and abrasion resistance. Properly applied, DeCetex 12 Emulsion is durably resistant to dry cleaning and laundering at 140°F. It is stated that it does not retain chlorine during laundering and may be used in combination with other finishing resins including those of the nonchlorine retaining types.

DECETEX 104 EMULSION

(Dow Corning)

A water repellent finish for textiles, water dilutable DeCetex 104 Emulsion contains 40% silicone solids. It is said to be durably resistant to dry cleaning and laundering at 140°F and it does not retain chlorine during laundering. Fabrics treated with this silicone finish are said to have a rich full hand and exhibit improved sewability plus increased tear and abrasion resistance. DeCetex 104 Emulsion may be used in combination with the commonly used finishing resins including those of the non-chlorine retaining types.

DECETEX 108 EMULSION

(Dow Corning)

A water dilutable emulsion containing 30% silicone solids, DeCetex 108 Emulsion is a durable water-repellent and stain resistant finish for textiles. Applied to synthetic fabrics it is said to impart a worsted-like hand and improve tear and abrasion resistance. It is stated that it is durably resistan tto dry cleaning and laundering at 140°F and does not retain chlorine during laundering. DeCetex 108 Emulsion may be used in combination with other finishing resins including those of the nonchlorine retaining type.

DEFOAMER A

(Fancourt)

A new organic liquid anti-foam agent said to be particularly effective in suppressing foam during the application of latices and resins to woven and nonwoven fabrics. It is stated that the product may be used in any sizing or finishing operations to control foam.

DEODALL #1

(Sindar)

A blend of aromatic materials possessing a nondescriptive, powerful odor. It is a mixture of volatile oils and owes its effectiveness to this physical property. It will evaporate along with organic solvents in sufficient quantity to completely modify the characteristic odor of the solvent and produce a nondescript, nonobjectionable scent. The odor of deodall #1 will not accumulate or impart its own characteristic odor to a product exposed to the atmosphere. While deodall #1 is not appreciably soluble in water, it can, however, be readily dispersed with the aid of an emulsifying agent. Deodall #1 is unique in that it performs well in a wide variety of industrial applications. The product

has also been successfully used as a solution to stack problems in manufacturing installations. Frequently, plants employ or produce materials and by-products which are odoriferous. Proper ventilation may alleviate the odor factor within the plant but often results in complaints from the surrounding community. Stack odors as pungent as those released from styrene process are said to have been successfully masked by exhausting deodall #1 which had been added during manufacture.

DEODORANT #15294

(Fritzsche)

A general purpose odor neutralizer for use in textile finishing oils.

DEPCOGEL 3X*

(De Paul)

A clear amber-colored, heavy, viscous liquid. A new economical concentration of anionic detergent and wetting agent. This product is said to have outstanding resistance to hard water, and an excellent stability to acids and alkalies even under high temperatures. It is stated that it produces a high stable foam which is unaffected by hardness of water. It finds its use on all natural and synthetic fibers.

* Registered Trade Mark

DEPCOLAN A N*

(De Paul)

A textile softener, substantive alkali, stable. Because of its whiteness, it should be used for white and pastel goods without risk of yellowing the fabric. It is stated that the resistance to discoloration is found also because of its alkaline character, yet this softener is substantive and produces softness which is equal to the best cationic softeners only. Because of its alkalinity it will not change shades or impair lightfastness. In other words, it is said to have the advantage of a cationic softener without the disadvantage of a cationic softener.

* Registered Trade Mark

DEPCOSET R 1*

(De Paul)

A monomeric formaldehyde resin. Especially recommended by the manufacturers for the application on cottons and synthetic and blends to provide durable stabilization and crease resistance. It is claimed to be ideal for embossing on all types of durable, mechanical finishes. It has a great storage stability without regard to temperature changes. When properly cured, it is stated that it will produce durable effects on cottons and synthetics. It is miscible with polyvinyl alcohols, starches, resins, emulsions, rubber latices, and water repellents. It is completely soluble in water, easily applied and very economical.

* Registered Trade Mark

DEWPRUF

(Huyck)

As a treatment for the prevention of bacteria damage, Dewpruf is applied in the manufacturing process. It is said to be permanent and effective under the most severe conditions. The manufacturer states that it eliminates the need for bacteriacides in mills to check mildew.

DISPERSANT NI-O

(Oronite)

An oil soluble nonionic dispersant said to have excellent emulsification characteristics for water-in-oil type emulsions. Water emulsifies readily with little or no mixing when added to solutions of NI-O in mineral oils, vegetable oils, kerosene, Stoddard solvent, mineral spirits, and other similar oils. It is stated that for the numerous additives employed as aids in textile processing, NI-O should provide a solution to the problem of water-in-oil emulsions where a nonionic agent is desired.

DISPERSANT NI-W

(Oronite)

A water soluble nonionic surface active agent, readily adaptable to numerous textile processing steps which require the presence of detergency, solubility, wetting, penetration, emulsion, or dispersion properties. Dispersant NI-W is a high active, clear, pale amber liquid that is chemically stable in the presence of strong acids and alkalies. In concentrations normally employed for textile processing it is said to have excellent emulsifying and solubilizing properties. In addition, it is said to be an efficient wetting agent, has excellent lime soap dispersing power, suspends solids effectively, and exhibits outstanding detergency characteristics.

DRAWAX 930

(Colloids)

A water-dispersible synthetic wax developed for yarn or fabric finishing where luster, and a smooth, slick finish is required. Coating is flexible and readily adaptable for narrow fabrics, especially elastic knit or woven goods. Compatible with most starches, gelatins, gums and resins.

"DUPONOL"* RA

(Du Pont)

Represents a liquid detergent composition suitable for use in a variety of detergent problems. It is stated that this product has high capacity for removing solid soils from textiles without significant redeposition. It is further stated that it has outstanding detergent power for removing the waxes and oils encountered during textile processing and is a particularly efficient wetting agent at elevated temperatures. "Duponol' RA is compatible with many different materials and lends itself to nearly every application where an anionic detergent, dispersing, penetrating, leveling or emulsifying agent is required.

* Registered Trade Mark

DYADE C

(Fancourt)

A new neutral dyeing assistant for acetate dyestuffs. It is stated that good unions can be obtained between the mono- and multi-filaments in the dyeing of nylon hosiery by the use of Dyade C. It enables the dyer to obtain bright, level shades with less efforts given to the selection of dyestuffs, time and temperature during the dyeing operation. It levels by controlling the particle size of the dyestuffs, works best at a pH of 6½ to 7, is not effected by hard water and rinses freely. It is claimed that a saving is made in time and cost by eliminating much redyeing.

DYEFIX C

(Sou-Tex)

A new type aftertreatment agent which may also be used as a pretreating agent because of its cation-active character. It is a yellowish, slightly opalescent liquid. It is said to improve considerably the wet fastness properties (fastness to water, washing, perspiration, wet ironing) and migration without reducing the lightfastness noticeably or influencing the shade on direct, developed, coupling and sulfur dyestuffs. It also is said to prevent hot water bleeding of vats. The following claims are made for the various dyeings: In the light direct dyeings, fastness to a #3 wash test may be attained by a cold aftertreatment. In medium and heavy dyeings, fastness to a #3 wash test may be attained on some colors by combining Dyefix C with copper sulfate and/or formaldehyde. Others are fixed to a 140 degree wash test and a greater selection is available to pass a #2 wash test. Selected medium and a heavy dyeings may be fixed to a #2 and a 140 degree wash test by a cold aftertreatment. Most developed dyeings can be fixed to a 140 degree wash test. Some can be fixed to a #3 wash test. All migration on all developed dyeings can be stopped. Application is by a cold aftertreatment. On sulfur dyeings, in many cases the washfastness is increased to pass a wash test at 212 degrees. Also the fastness to soda boiling is increased. Application is by a cold aftertreatment. In the field of unions, Dyefix C improves the wet fastness properties of dyeings prepared with union, union fast and union metachrome dyestuffs, and also their fastness to milling.

Dyefix C is said to be particularly adapted for textile printing because it can be used for the aftertreatment of material dyed with substantive colors previous to discharging without impairing the dischargeability. Dyefix C improves the peroxide fastness of some sulfurs, hydrons and indocarbons.

DYNA-SALT

(Amalgamated)

A readily-soluble, white, 100% active powder used in conjunction with Dynadye V to insure pH and proper stability of the bath. It is suggested Dyna-Salt be used with Dynadye V to lower the pH to the point of optimum efficiency. Heretofore this has been accomplished by the use of strong acids. Dyna-Salt obviates the use of these strong acids and the handling danger thereof. Dyna-Salt is unique in that it releases its acidity very slowly to convert the Dynadye V to its most effective form, resulting in better leveling properties. It is recommended that one part of Dyna-Salt be used to each two parts of Dynadye V. The use of Dyna-Salt is said to insure greater control of bath, less chance of scum or "lake" formation, and prevent the possibility of decomposition of dyestuff.

DYNESOL M

(Amalgamated)

A sulfonated poly-ester of aliphatic alcohol said to possess unusually fast wetting properties with good sudsing characteristics. It is suitable as an assistant for the pre-wetting of fabrics and may also be used as a dyeing assistant. It is stated that it has excellent stability and requires very low percentages for effective operation. It is extremely light in color and very economical in use.

DYNESOL T

(Amalgamated)

A primary branched-chain alcohol sulfate said to possess good wetting and penetrating properties with exceptional resistance to both acid and alkali. It has low-foaming characteristics which make it suitable for kier-boiling, vat and package dyeing. It also finds use as a carbonizing assistant. It is stated that it retains its efficiency in both sulfuric acid and caustic soda solutions even after prolonged boiling.

EMBOPRINT* CLEAR HV
Patent Pending

(Metro Dyestuff)

A pigment-free clear of high viscosity for use with Emboprint Inks.

* Registered Trade Mark

EMBOPRINT* CLEAR LV
Patent Pending

(Metro Dyestuff)

A pigment-free clear of low viscosity for use with Emboprint Inks.

* Registered Trade Mark

EMBOSET* A

(Metro-Atlantic)

A new type thermo-setting resin, which is said to produce highly durable mechanical finished effects on cotton and durable stabilization and crush resistance on spun rayons and blends. It is stated that one of its outstanding properties is the resilient hand it produces on nylon, acetate, and other sheer hydrophobic fabrics. All of the finishes produced with Emboset A are exceptionally durable to both laundering and dry cleaning. The product is stable to storage for several months. Solutions of Emboset A have excellent bath life and the product is compatable with relatively high concentrations of acids and acid salts. The application procedure for this product is the same as that normally used with the common type thermo-setting resins.

* Registered Trade Mark

EMBOSET* B

(Metro-Atlantic)

One in the series of newly developed thermo-setting resins which will produce an unusually wide variety of finishes and mechanical effects on cotton and synthetic fabrics. It is used to obtain very durable mechanical effects on cotton and to obtain shrink-resistant and crush-resistant finishes on spun rayons and blends. The product is a free-flowing liquid, which is readily miscible with water. This material is stable to storage for several months at atmospheric temperatures. Solutions of Emboset B have unusually long bath life and it can be used in combination with highly-acid catalysts and other acid salts. It is claimed that the outstanding advantages of Emboset B over the conventional type of thermo-setting resins are the exceptional stability of

* Registered Trade Mark

See pages 809-810 for manufacturer's addresses

the product and the excellent durability of the finishes obtained with it. Emboset B is applied by the same general methods as the common thermosetting resins.

EMKALON BT

(Emkay)

A specially prepared anionic substantive softener clear soluble in water. Has a pH of 8-8.5. The product may be acidified to become a cationic substantive softener. Recommended by the manufacturers as a starch lubricant in cotton finishing. It is said to be compatible with gas-fading inhibitors, urea resins, and many chemicals used in finishing. It does not yellow with high heat.

EMKALON N BASE

(Emkay)

A 100% active anionic substantive softener which can be diluted to a popular strength anionic softener. The product can be easily converted into a cationic softener. It is claimed that, with emkalon N base, finishing plants can make their own anionic and cationic softeners which prove highly economical and efficient. Products made are nonyellowing.

EMKALUBE NL

(Emkay)

A bright oil readily soluble in warm water recommended by the manufacturers for use in the trough in the full fashion knitting of nylon hosiery. It is said to embody the correct amount of wetting, cleaning, and emulsifying properties to assure a clear stitch and proper lengths.

EMKASTAT K

(Emkay)

An anionic substantive type softener said to be readily soluble in warm water and resistant to hard water and acid. It is stated that it is specially prepared to give maximum anti-static results when used in the final rinse and dried into the yarn of fabric.

EMKATERGE A & B

(Emkay)

Highly concentrated base products which it is stated, are mixed in prescribed proportions to make an efficient detergent and graphite cleaning liquid for nylon, Orlon lever, lace and their combinations with other fibers. It is further stated that the prepared product will not sour or develop rancid odor and may be used for several weeks after preparation without loss of cleaning efficiency. The cleaning solution is said to be highly effective and prevent redeposition of the graphite.

EMKATEX BC

(Emkay)

A smooth thin flowing gel composed of highly sulfonated alkyl aryl detergents, amide condensates, and terpenes in proper balance. The product is said to offer excellent wetting, emulsifying and detergent action. It is claimed to be resistant to salts, acids, alkalies, and most other chemicals. Product is recommended for use in the neutral or acid dyebath.

EMKAWATE OB

(Emkay)

A clear, soluble blend of gums compatible with urea-formaldehyde and melamine type resins, and most other finishing compounds. Used to impart a full, firm hand.

EMULSIFIER 9X-151

(Rohm & Haas)

A degreasing, emulsifying and level dyeing agent said to be of outstanding chemical stability and compatability which can be used over a wide pH range as well as in the presence of practically all dyestuffs, chemicals and finishes employed in standard plant processing.

EMULSION WG

(Laurel)

A paste emulsion of blended waxes and fatty oils. It is prepared for use in the troughs on winders and is recommended for use on cotton, wool, worsted and mixed fibers. It is stated that this product will impart softness and fullness, and will improve the knitting qualities of the yarn.

ENERGETIC

(Armour)

A nonionic detergent, which is said to have characteristics of maximum detergency, high soil-removing and soil-suspending properties, excellent emulsifying action, good wetting properties and surface-tension lowering ability and excellent stability to textile chemicals. It is claimed that it is highly concentrated and powerful, so that one-third the quantity of conventional anionic material is required. The product is recommended for almost all scouring operations, particularly kier boiling, hosiery scouring and dyeing, dye leveling, continuous bleaching, soaping off, vat and naphthol dyeing, soaping off prints and wool scouring.

ENERGETIC S

(Armour)

A nonionic detergent companion product of Energetic. It is designed for use in the presence of petroleum and aromatic solvents. The solvents loosen grease, stains and dirt from the cloth and Energetic S then effectively removes both solvent and dirt from the textile fibers, preventing redeposition of them on the cloth. Energetic S is especially suited for boiling off such synthetic fibers as Dacron and Orlon, hosiery finishing, and machinery and needle cleaning.

ERIONAL* NW

(Geigy)

A nylon resist. The manufacturer states that this new product has proven very effective for the three major fields in which the reserving of nylon plays an important part — 1. Contrasting Colors — Nylon and Wool: First dyeing the nylon, then resisting it so that in a cross dyeing operation a contrasting shade can be produced on the wool. 2. Nylon White — Cotton or Rayon Dyed: The reserving of nylon either white or a different color than rayon or cotton in combination fabrics. 3. Spun Nylon — Wool Blends: Producing solid shades on blended fabrics or yarns — the majority of acid, chrome and milling colors to dye the nylon much heavier than the wool, especially in light to medium shades. It is further said that unlike some of the resists previously used Erional NW will not cause an offshade fade on the wool or cellulosic fibers in the blend. Further, it can be applied in the same bath as the wool or cellulosic fibers colors if the simple precaution is taken to add the Erional first and let the bath run 15 minutes prior to the addition of the dyestuffs. Erional NW is also recommended for use as an aftertreating agent to effectively increase the wash fastness of spun nylon that has been dyed with acid colors.

ESTRACHEL AP LIQUID

(Crown)

A sequestering agent identified as the sodium salt of a polyamine carboxylic acid. It is said to differ from EDTA in that it is able to chelate ferric ions in alkaline solutions and is not precipitated by acids. It is particularly useful in peroxide bleaching operations where it promotes better whites.

ESTRALENE SEW

(Crown)

A nonionic fiber and fabric lubricant developed to improve sewability and seam efficiency. It is said to be unique not only in that when applied it reduces fiber to fiber friction and needle to fabric friction but in addition imparts a noticeable softening effect. This is accomplished without causing excessive fiber slippage or appreciable tensile strength losses.

ESTRAMINE H

(Crown)

A cationic substantive softener highly effective on fabrics composed of hard twist yarns producing excellent softness, fullness and draping qualities. It is said to impart these properties to cotton, acetate, linen, nylon and other high polymer synthetics. It is particularly recommended by the manufacturers for use with thermosetting resins for the production of crease resistant finishes and durable mechanical effects such as embossing, schreiner calendering and friction finishes. While substantially cation active and fully substantive it is unique in that it has a wide pH tolerance of 2.0-9.0.

ESTRONON GEL

(Crown)

An amide sulfonate detergent in gel form. Chemically it is the sodium salt of an amidoethyl-sulfonate which is resistant to acid, alkalies and hard water. It is said to have outstanding wetting, foaming and detersive properties at elevated temperatures. It is recommended as an assistant for kier boiling, open boil-off, bleaching and dyeing.

FANTEX A

(Fancourt)

A neutral detergent and penetrant. It is recommended by the manufacturers as a penetrant and detergent for the scouring and dyeing of rayon and cotton in one operation. It is said to effectively remove many types of soil, provide good penetration and give even dyeing with bright shades. It is used extensively in the cross-dyeing of fabrics.

FEN ANTI-FUME

(Amalgamated)

A gas-fading inhibitor which is applied in the jig or dye box. It is said to combine durable protection against atmospheric fading with a minimum of yellowing and shade change. It is stated that it is very stable in the bath even at the boil and exhausts uniformly with the dyestuff in the same bath. It provides a protective finish which is said to be fast to washing and dry cleaning, showing a minimum degree of yellowing and color change. 1 to 3% of Fen Anti-Fume on the weight of the yarn or fabric usually recommended. The percentage required for best results will depend upon the depth of shade.

FEN SILICONE RESIN

(Amalgamated)

An emulsion of silicone resin developed to give to textile yarns and fabrics a water repellent finish which is highly resistant to many dry cleanings. Fen Silicone Resin is very easy to apply and requires no special equipment. It has the added advantage that it may be combined with urea-formaldehyde resins as well as with polyvinyl acetate resin emulsions, giving a combination of water resistance as well as improved hand.

FINISH E-2

(Soluol)

An anionic softener comprised of non-drying vegetable oils, synthe[illegible] esters, and partial amines. It is stated that it possesses exceptional softening power, and is indicated for use on particularly harsh, boardy or wiry fabrics.

FIXATIVE DC

(Amalgamated)

A substantive cationic compound developed to fix direct colors on cotton and rayon. It is said to be particularly effective in reducing bleeding and crocking of direct colors as well as increasing fastness to washing and perspiration. It is stated that it prevents the bleeding of prints into white discharge, improves color fastness to wet-processing and has the further advantage of effecting no shade change on dyed yarns or fabrics.

GF INHIBITOR BASF

(BASF)

A new product to improve the fastness to gas fading of acetate dyed fabrics. GF Inhibitor Basf may be added to the dyebath or separately as an aftertreatment. The normal fastness properties of the dyestuff thus treated are practically uninfluenced by the GF Inhibitor Basf.

GOOD-RITE* K-780

(Goodrich)

The potassium salt of a polymer based upon acrylic acid. Supplied as a 15% clear water solution for suggested use as a latex thickener.

* Registered Trade Mark

See pages 809-810 for manufacturer's addresses

GOOD-RITE* TS-21

(Goodrich)

A warp sizing agent for spun nylon and acrylic yarns. Supplied as a viscous 15% water solution.

* Registered Trade Mark

GOOD-RITE* ZAC

(Goodrich)

Zinc dimethyldithiocarbamate-amine complex is available for large scale evaluation as a rodent repellent. It is supplied as a 40% dispersion in water. Application to fabric and yarn is achieved by means of a suitable binder, eg, starch or synthetic latices.

* Registered Trade Mark

HALANE*

(Wyandotte)

An organic active chlorine compound, 1,3-Dichloro-5,5-Dimethylhydantoin is useful in a variety of applications where the conventional hypochlorites are not entirely satisfactory. It is a white powder with an available chlorine content of 66%, limited solubility in water, and unusual stability for this type of compound. Suggested applications are the bleaching of cottons, the shrinkproofing of woolens at low pH, and the chlorination of pearl starch to reduce viscosity. Also it may be used for a variety of other bleaching applications both in the textile mill and in home and commercial laundering.

* Registered Trade Mark

HARTEX DEFOAMER S

(Hart)

A new development in anti-foaming agents which is said to eliminate foam with exceptional efficiency. Defoamer S, available as a viscous cream colored emulsion, is claimed to offer the following advantages: (1) extremely effective anti-foaming action; (2) wide application (3) no loss of efficiency due to evaporation; (4) no reforming takes place; (5) economy—low cost per job done; (6) effective over the entire pH range; (7) ease of handling.

HARTEX SOFTENER M

(Hart)

A non-ionic softening agent which, it is claimed, shows no effect on the shade or lightfastness of dyed goods or prints and will not discolor whites. This softener is said to provide a very soft, lofty hand with maximum draping qualities for all types of cotton, rayon, acetate, Bemberg and nylon fabrics. It is used to soften whites after kier boiling, as a softener in weighter finish for knit goods and as a softener for flame retardant finishes because of its stability to high concentrations of salts.

HARTOFIX

(Hart)

A substantive complex cationic resin that is used in aftertreating direct dyed fabrics to improve the washfastness of the color. Hartofix, available as a straw-colored viscous liquid, may be applied alone or in conjunction with copper salts. It is stated thaat this fixative is used for eliminating bleeding and staining of prints during wet handling and wet pressing, improving the wash resistance of cotton and rayon hosiery yarn, eliminating the staining of discharge prints where the ground has been dyed with a direct color, and for use in dyeings or prints when applying resin finishes from warm baths.

HARTOFUME EM

(Hart)

An emulsion of a complex aromatic amino compound which is said to provide durable gas fading inhibition. Hartofume EM provides a complete range of gas fading protection for dyed acetate fabrics. It is stated that this protection is unaffected by washing, dry cleaning or dye stripping. This inhibitor is substantive to cellulose acetate and may, therefore, be applied to the cloth directly in the jig or dyebath. Hartofume disperses in water giving emulsions which are said to be stable even at the boil. This product does not affect the lightfastness or shades of most acetate and direct dyes.

HARTONYLE

(Hart)

A resin finishing agent in clear liquid form manufactured from type 8 nylon. Hartonyle is said to impart to nylon warmness and greater absorbency, improved snag resistance, dullness and increased wearing life. To cotton, acetate and rayon Hartonyle is said to impart greater abrasive resistance, improved wear resistance and increased tensile strength.

HARTORESIN T

(Hart)

A new type resin which is said to impart shrinkage control and crush resistance to rayon and cotton fabrics. It is stated that this product was developed especially to overcome the inherent disadvantages found in the use of urea and melamine-formaldehyde resins. Hartoresin T treated fabrics are said to show exceptional resistance to washing, very low chlorine retention, do not require washing after application and durable crush-resistance finish without excessive amount of resin in fabric. Hartoresin T is a stable liquid which gives rise to no objectionable fumes during application.

HOSIERY SCOURING AND DYEING COMPOUND #5404 A & B

(Berg)

A scouring powder and dyeing assistant used together for the one-bath scouring and dyeing of nylon hosiery. It is stated that, besides showing substantial savings in time and labor, these products yield excellent unions with full shade.

HUMISOLV 615

(Carolina)

A water dispersible synthetic ester especially recommended by the manufacturers for application in air conditioning systems, cooling towers, air washers, etc. for the efficient removal of oil and grease from the sysetem. Shut down cleaning time is materially reduced, since oil removal eliminates gummy surfaces to which lint, dust, algae and other contamination might cling. Effective concentrations range from 1 part to 1000 parts, down to 1 part to 4000 parts. It is said to have the excellent characteristic of not being effected by pH or hardness of water used.

HYDROXY BINDER

(Kali)

Hydroxy Binder is intended for use as a non-slip finish for woven fabrics, with the added properties of producing resistance to shrinkage or dimensional change, and of increasing tensile strength. Hydroxy Binder is compatible with starch, gums, and gelatine, and when used as an additive to these finishing agents, is said to greatly increase film strength and adhesive properties.

HYGIA BS

(Fancourt)

A new bacteriostatic finish in the form of a white emulsion. It is stated that Hygia BS produces bacteriostatic action on any any treated knitted or woven fabric, that it effectively destroys various micro-organisms and bacteria and is an excellent bacteriostasis for odor producing bacteria present on fabrics. For cleansing and resterilizing only one warm rinse is required to maintain bacteriostasis. The finish imparts softness and lubrication, is nonirritating and nontoxic.

IGEPAL* CO-610

(Antara)

A low-foaming liquid 100% active nonionic surface active agent of the alkyl phenoxy polyoxyethylene ethanol class of compounds. It is recommended by the manufacturers for a wide range of applications which require a low foaming, surface active agent that is stable to acid, alkali and metallic ions. Igepal CO-610 is said to possess good wetting, emulsifying and dispersing properties and is recommended for use in many wet processes in the preparation, dyeing and finishing of textiles.

* Registered Trade Mark

IGEPON* T-33

(Antara)

A new addition to Antara's line of Igepons is Igepon T-33, a clear, stable liquid with an active ingredient content of approximately 33% sodium-N-methyl-N-oleoyl taurate. This new liquid Igepon T can be stored in tanks and pumped throughout a plant for delivery to various departments. Igepon T-33 is an anionic detergent said to possess good wetting, emulsifying and dispersing properties and to have outstanding stability to acid, alkali and hard water. This versatile detergent is used in the preparation, dyeing and finishing of cellulosic, animal and synthetic fibers.

* Registered Trade Mark

INSIDOL

(Arkansas)

Claimed to be a highly-efficient wetting agent for use wherever rapid penetration is essential. For most applications, low concentrations of the order of 0.1%, on the volume of the bath, are sufficient. Insidol has a pH of about 6.0 as marketed, but is highly efficient over a wide pH range from about 2.5 to as high as 11.0. However, it is not effective in the presence of strong acids, such as sulfuric, and strong alkalies, such as caustic soda. It is said to be highly resistant to hard water and to salts, such as sodium chloride and sodium sulfate. In physical appearance, Insidol is a clear water-white flowing gel which dissolves rather slowly in warm or hot water. From the standpoint of chemical classification, Insidol is an ester of a sulfodicarboxylic acid, and is marketed in both 25.% and 10.% concentrations.

KALEX, KALEX CONC

(Hart)

The tetra sodium salt of ethylenediamine tetraacetic acid. It is used in numerous operations to eliminate the influence of calcium, magnesium, ferrous and heavy metal ions.

KALEX E

(Hart)

Sodium salt of polyaminocarboxylic acid suitable for sequestering ferric ions as well as calcium, magnesium and other divalent metal ions in solution containing 3 to 50% sodium hydroxide.

KALEX IR

(Hart)

Sodium salt of polyaminocarboxylic acid suitable for use in deactivating ferric ions as well as calcium, magnesium and other divalent ions in solutions containing less than 3% sodium hydroxide.

KEMPLEX A PLUS

(Burkart-Schier)

A new more concentrated form of the original Kemplex A organic sequestering agent. It is available in a convenient liquid form and is said to effect economy in cost and storage.

KRALAC* 2711

(Naugatuck)

A high styrene film forming copolymer latex that may be used to coat, saturate or size fabric, leather or carpeting. It may be used as received or compounded with synthetic or natural rubber latices. It is said that this latex may also be compounded for vulcanization.

* Registered Trade Mark

KRALAC* 2714

(Naugatuck)

A non-film-forming high styrene copolymer latex that may be blended with synthetic or natural rubber latices to form a film for coating, saturating or sizing operations. It is said to impart stiffness; to improve tensile strength and modulus; and to increase resistance to abrasion, tear and solvents.

* Registered Trade Mark

KRALAC* 2725

(Naugatuck)

A new type of plastic latex said to produce self-curing films. It may be used for saturating, sizing, coating or pigment-binding. It is said to have high tensile strength, excellent abrasion, tear, and solvent resistance, and good aging. This latex will not cause dye discoloration or shading of the finished fabric. It is low in specific gravity, and is chlorine and plasticizer free.

* Registered Trade Mark

KYRO* AC

(Procter and Gamble)

A modified amine condensate type surfactant originally designed for use as a fulling and scouring agent for wool and part wool fabrics. It is especially well suited for fulling and neutralized goods carbonized in the grease as it is compatible with the relatively high concentrations of soda ash required. Kyro AC fulled fabrics are said to possess a soap-like finish, not obtainable with other synthetic detergents. Kyro AC is claimed to be an outstanding oil remover under wool processing conditions, especially when used with soda ash or complex phosphate. Kyro AC is also finding use in scouring rayons and cottons at higher temperatures, for soaping off vats and naphthols, for jig scouring nylon fabrics, hosiery scouring, etc.

* Registered Trade Mark

LAURAMINE #20

(Laurel)

A paste-type softener of high activity which is designed for use on cotton yarns in package machines. It is an anionic compound which forms emulsions of very fine particle size and thus insures uniform application. It is also applicable to woolen and worsted yarns. It is stated that it imparts a soft fullness and lubricates the goods to allow high-speed cutting and sewing.

LAURELTEX #340

(Laurel)

A carefully compounded product recommended for removing transfers from hosiery made from nylon and other fibers prior to redyeing. As a scouring assistant it will aid in removing heavy grease and machine oil stains encountered in the production of nylon tricot goods and other fabrics.

LAURELTEX WM

(Laurel)

A highly efficient penetrant recommended by the manufacturers for use on cotton yarns in neutral and alkaline solutions, containing up to 1% total salts. Especially good for package dyeing work.

LIGHTNING PENETRANT #3903

(Berg)

A new wetting agent of the sulfo-ester type.

LUB TX

(Fancourt)

A nonionic softener in the form of a clear oily liquid, soluble in all proportions with water. The product is compatible with most types of textile finishes and resins and is recommended by the manufacturers as a softener for any resinous treatment requiring high temperature curing. It is stated that Lub TX will not oxidize, discolor or develop any odors at any curing temperature from 300°F to 400°F. A soft drapey hand with fullness is obtained by the use of this product.

LUSTRAMINE

(Soluol)

Anionic softener, partially substantive. Applicable to viscose rayons, acetates and other synthetics, for imparting a full, velvety hand.

LUSTRASOL-N

(Soluol)

Essentially anionic softener. It is stated that it is very economical in use, and applicable to cotton, viscose rayon, acetate, and cuprammonium fabrics.

LYOPRINT* SE

(Ciba)

An effective textile printing assistant for use in direct, acid and vat color, as well as discharge printing. It is stated that it aids in the preparation of solutions of difficulty-soluble direct and acid dyestuffs, produces better whites in discharge printing, and improves the color yield and the fastness to rubbing of certain vat colors.

* Registered Trade Mark

MERCERIZING SOFTENER MS

(Laurel)

An economical anionic softener for use on mercerized warp and knitting yarns. It is said to be highly resistant to yellowing.

MERTEX 82

(Tex-Chem)

A mercerizing penetrant designed to give maximum penetration in the concentrations of caustic soda generally used for mercerization. It is stated that this product will not separate on standing overnight in the caustic liquor, and is applicable to all types of equipment used in mercerizing cotton.

METAFOS*

(Rumford)

A soluble, glassy sodium phosphate water conditioner used in textile wet processing to improve detergency, dispersion and emulsification. It is stated that Metafos sequesters calcium and magnesium and protects against processing troubles caused by dissolved iron in the water. In raw wool scouring or kier boiling of cotton, Metafos is said to turn out clear, clean goods for bleaching and dyeing. In rinsing, Metafos speeds removal of soluble soaps and pectinates and emulsifies oils, waxes and other finishes without gumming or spotting. Metafos dispersive action produces even, level penetration of dyestuffs, printing gums, pigments and fillers.

* Trademark

MODICOL* VD

(Nopco)

Ideal fluid thickener for latex application. By providing a smooth, gel-free, high-viscosity latex in low concentrations, it is said to permit only minimum penetration of fabric . . . especially important in nonskid rug backings. The product blends easily with hot or cold water, eliminating pre-cooking, and pours freely without "break-off." Because there is no appreciable "rinse-out," it is recommended that the latex mixture be applied before dyeing. The manufacturer reports complete resistance to decomposition by alkalis and to decay by microorganisms.

* Registered Trade Mark

MONALOID

(Mona)

The addition of small percentages of Monaloid, from ¼ to 1% to the starch mix is said to avoid setting up of the mix while standing or aging in storage vats. Monaloid improves the penetration of warp sizes and of backfilling. It is stated that the film-forming properties are improved and the adhesion is increased. The dispersion of dyes and pigments is facilitated and improved. Printing pastes show faster set-up and yield clearer prints.

MONAMINE AF-100

(Mona)

Said to be an exceptionally effective scouring and fulling agent for woolen piece goods, sometimes also used in combination with soaps. When used together with soaps will facilitate a quicker and better rinsing job. It is stated that goods fulled or scoured with Monamine AF-100 will not develop any odor in the pieces fulled or scoured during aging or storage.

MONAMINE 3-89

(Mona)

For dispersing, emulsifying and thickening. Monamine 3-89 is soluble or dispersible in aliphatic hydrocarbons, like kerosene, Stoddard solvent, chlorinated hydrocarbons, mineral oils, aromatics, etc. Monamine 3-89 combines water and oil solubility. Also recommended as softener.

MONATEC T

(Mona)

Said to be an effective nonsubstantive gasfading inhibitor for acetates to be applied by padding.

MONAWET MO

(Mona)

Claimed to be one of the most powerful wetting agents and penetrants. It is available in different concentrations to be used on cotton wool, silk and synthetic fibers. It is stated that: it is outstanding for wetting-out of gray goods prior to caustic boiling and chlorine bleach and prior to peroxide bleach. It is an excellent dispersing agent for dyestuffs; and that it may also be added to the dye bath for improved penetration and uniformity of difficult shades. Applicable wherever an exceptionally powerful wetting agent and penetrant can improve performance.

MULSOID 713

(Colloids)

An emulsifier-detergent which is said to exhibit stability in acid or alkaline medium. It is stated that its emulsifying power plus stability lends to quick, operation saving, economical scouring and bleaching of nylons. Contains solvents for ease in handling, but available as concentrate as Mulsoid 1213.

NAPHTHOL STABILIZER NF CIBA

(Ciba)

A stabilizing agent for the diazo solutions used in naphthol dyeing. It is also recommended as a washing agent after coupling to improve the fastness properties of the dyeings. It is stated that the product is readily soluble in water and in general is stable to salts, acids, alkalies, wetting-out agents, dyestuffs, etc.

NEKANIL C CONC

(BASF)

A new type of all around textile assistant. It is offered in the form of a practically colorless, slightly viscous liquid which can be readily diluted with water. Nekanil C Conc. is nonionic and stable to acid, alkali and metal salts and resistant to hard water. It is said to possess excellent characteristics as a wetting, dispersing, emulsifying, washing and levelling agent. A particular advantage of this new product is that it possesses these properties at low temperatures and can therefore be used as a detergent at room temperature.

NEOLAN* SALT P

(Ciba)

A nonionic assistant for the dyeing of Neolan and other metallized acid dyestuffs. It is stated that its use in the dyebath reduces the amount of sulfuric acid required for dyeing, that its cleansing action in a boiling acid dyebath prevents faults due to insufficient scouring of material prior to dyeing, and that it improves the fastness to rubbing of full shades, increases color yield of many dyes, and produces better coverage of tippy wool.

* Registered Trade Mark

NEOVADINE* AN

(Ciba)

An auxiliary for the widest variety of applications such as wool dyeing and printing. It is stated that it will strip dyeings without fiber damage, promote levelling, make possible uniform dyeing of wools from different sources and light damaged wool, and also overcome tippy dyeing. In the print works, it prevents bleeding of the print cloth into the ground during washing, and also leads to better white effects in discharge printing of nylon and nylon/wool fabrics.

* Registered Trade Mark

NEW DEPCO FIX A*

(De Paul)

A water-soluble cationic resin fixative which is recommended especially for direct dyes. This product is claimed to be of great importance as an after-treatment for direct dyes on cotton and rayon. It is said to prevent completely the migration and staining, and will render most direct dyes, fast against mild soap washings. It is compatible with acidic compounds only. Unaffected by hard water.

* Registered Trade Mark

NOPCO* 1056-RA

(Nopco)

A balanced antistatic processing oil for fine denier synthetics. It is said to combine excellent fiber-to-metal lubrication, antistatic control, effective spreading action, and built-in deter-

* Registered Trade Mark

gency without overloading the yarn. This multi-purpose oil may be applied simply to the yarn by means of the roll applicator or wicking device. Then, if the yarn becomes soiled, the built-in detergent is waiting to lift dirt from the fibers . . . quickly and easily.

NOPCO* 1125-P

(Nopco)

An anti-graphite, anti-soil processing aid for nylon yarns, which is also said to provide the necessary lubrication for high-speed processing and to prevent storage of static charges. It is completely self-scouring—therefore requires no additional detergent. The manufacturers recommend a 5% roller application to nylon yarn for the weaving, knitting and premium lace-making industries (wherever soil is a critical problem.) Diluents are Stoddard solvent or water, which upon evaporation leave a 5% residue on the yarn.

* Registered Trade Mark

NOPCO* 1425-B

(Nopco)

An ethylene oxide condensate recommended as a leveling agent in the application of dyes to textile fibers. It is stated that its effectiveness has been demonstrated by leveling and partially stripping metallized acid dyes on wool. Shades at 1%, 2% and 3% have been combined and leveled to a uniform depth without loss of intensity and without redyeing. Vat dyes on cotton have been applied and, it is claimed, stripped with superior results by adding recommended quantities of Nopco 1425-B to the dye liquor. It is believed that the product performs its unusually effective action by forming a complex with dye molecules and then releasing them slowly to the fiber.

* Registered Trade Mark

NOPCO* 1656-P

(Nopco)

Balanced lubricant which is claimed to completely eliminate static electricity in processing fine worsteds and blends. The manufacturer recommends application to top for the best balance of fiber-to-fiber cohesion and fiber-to-metal lubricity, combined with adequate anti-static control. 1% on weight of fibers is recommended for American or French systems, 2.5-3.0% for English or Bradford. The product is said to be notable for economy of scouring (about 75% reduction in amount of soap or detergent is permitted and freedom from gumming, corrosion, rancidity, oxidation and yellowing.

* Registered Trade Mark

NOPCO* 2152-P

(Nopco)

Antistatic fiber processing lubricant for Dacron, Orlon, nylon, and Dynel. By providing effective fiber-to-metal lubrication, fiber-to-fiber cohesion and static control, Nopco* 2152-P is said to compensate for the differences in the various synthetic fibers. These differences are surface smoothness and degree of crimp, denier sizes and fiber length. It is said to permit optimum staple fiber performance of straight synthetics and synthetic blends on Bradford, Modified-Drafting, Perlock, or Pacific Converter systems.

* Registered Trade Mark

NOPCO* WG

(Nopco)

A blend of synthetic fats and waxes offered as a substitute for wool grease in the manufacture of cordage. When used on an equal weight basis for degras, the resulting cordage is said to have all the characteristics of the conventionally manufactured product. Advantages claimed for the product include: clean odor, laboratory-controlled uniformity, constant availability, and price stability.

* Registered Trade Mark

NOPCOSIZE D

(Nopco)

A non-foaming, synthetic, water-soluble polymer size for dacron filament yarn—either single end or warp sizing. It is easily prepared, completely stable, and the size solution has a long storage life. Titration is unnecessary. It is stated that film on the yarn will not become "tacky" or "gummy" (even at 76% relative humidity), will not shed or stick to dry cans. The scourability is also said to be excellent. Stainless steel equipment for processing is unnecessary.

NOPCOSIZE N

(Nopco)

An internally-plasticized, polyacrylic acid (PAA) pliable warp size for nylon, which is said to allow greater depth of size protection without flaking or causing "tear drops" in fabrics. Users are said to report "the cleanest goods ever scoured" from warps sized with Nopcosize N. Because of the non-shedding property, filament bonding is considerably improved. Its anti-static character and working viscosity are not affected by normal changes in humidity and concentration.

NORANE* 4 STAR SWR

(Warwick)

A clear silicone water repellent which is spontaneously emulsified in water to give stable dilute emulsion for application to textiles. This product is said to give extremely durable water repellency on rayon blends, cotton, nylon, acetate, Dacron and other fabrics either when used alone or in combination with urea, melamine or modified urea-formaldehyde resins.

* Registered Trade Mark

NUODEX 100 VT

(Nuodex)

A fungicide specifically developed for use in vinyl coatings of fabric or paper used for shoe liners. It is said to be nonirritating and non-sensitizing to the skin. It comes in liquid form and is easily incorporated in vinyl coating compositions where it is compatible with all commercial resin-plasticizer-stabilizer combinations. Nuodex 100 VT is stabilized so that heat encountered during normal milling and curing operations won't cause discoloration.

NYLON SCOUR NF CONC

(Tex-Chem)

A highly concentrated scouring agent which is said to be extremely effective for the removal of graphite from nylon laces. Supplied in a form which enables mill to dilute with equal weight of water before use, thereby affording substantial economy. Cleaning time for nylon laces can be cut substantially when used in this manner. This product is designed to keep difficulties due to foam at a minimum, thereby further permitting ease of operation.

NYLON SCOURING ASSISTANT #1103

(Berg)

A blend of solvents and emulsifier. Added to the scouring or dye bath, sizing materials, oils, etc., are said to be suspended and prevented from redepositing on the fiber. May be used as an additive in the one bath method of dyeing nylon hosiery.

NYLONYX DS

(Onyx)

A complex liquid synthetic detergent containing a carefully adjusted blend of condensate products. It is equally efficient as an additive to scouring baths, ranging in pH value from 4 to 11, and does not break down on prolonged boiling. It is said to be very effective in the removal of oils and greases and coning oils from textile fibers, particularly those found on pre-dyed yarns. It is stated that it does not permit redeposition of these oils, etc., therefore it is especially effective in retaining these materials in the emulsified and suspended state, even when the bath is cooled to room temperature. It has been found especially effective for the dipping solution for pre-setting nylon hosiery, as well as in the hosiery scouring and dyeing baths.

NYLUBE F

(Fancourt)

A hosiery finish containing resin solvents and lubricants. It is stated that Nylube F, when used in conjunction with resins, is effective in shrinking and tightening the stitches of nylon full fashion hosiery, particularly in the welts, eliminating the forming of bubbles or blisters which occur after boarding.

OCTALENE B

(Fancourt)

A new heavy duty neutral detergent said to possess excellent penetrating properties. It is recommended by the manufacturers for soiled goods which require a good scour while dyeing and is very effective for the cross-dyeing of rayon and acetate. It rinses readily from the goods and is not affected by any form of hardness.

OLAPON R

(Laurel)

An anionic compound especially produced for scouring Orlon and other synthetic fibers. It is said to be excellent for removing mineral oil stains from Orlon.

OLAPON S

(Laurel)

A sodium lauryl sulfate recommended for washing and light scouring operations. It is said to be very soluble and free rinsing, and will leave the goods soft and resilient.

ORCO DEVELOPER DEC SPECIAL

(Organic)

A developer recommended for use with Orco Diazo Black B Conc for producing an extremely all around fast black on Dacron.

ORCO DEVELOPER IV

(Organic)

A sulfonated alkylaryl dichromate, pH 5-6, used for the oxidizing and aftertreatment of vat dyestuffs and sulfur colors. The use of Orco Developer IV, in place of the conventional oxidizing techniques, is claimed to give brighter shades, increased wash fastness, less shade change from the original, and a much softer hand to the goods. For maximum effectiveness, 1-2% of the product applied for 10-20 minutes, at or near the boil, is recommended.

ORCO NYLON SCOUR B

(Organic)

A product compounded for the express purpose of removing the graphite which has been deposited on nylon and Dacron laces and on tricot material in the process of manufacture. Orco Nylon Scour B is said to perform this function by utilizing a principle of electrostatics with the subsequent suspension of the graphite in such a manner as to prevent its redisposition on the fabric.

ORCO SYNTHRO WHITE W

(Organic)

A liquid fluorescent whitener for use on wool, silk, acetate, rayon, and nylon from an alkaline bath. The efficacy of Orco Synthro White W can best be utilized in a fulling or scouring operation where the pH remains above neutral. The amount of the product to be used depends entirely upon the required degree of whiteness. However, usually 1½% of Orco Synthro White W will be found to meet most demands.

ORCO SYNTHROWITE A

(Organic)

A liquid fluorescent whitening agent especially designed for use in a boiling acid bath for the brightening of wool or nylon goods. It is stated that Orco Synthrowite A has been and can be used in an acid dyebath to enliven a shade where just a touch of brightness would make a near perfect match.

ORCO SYNTHROWITE C

(Organic)

A brand new optical whitening agent for cotton and rayon claimed to possess extraordinary brightening powers. Orco Synthrowite C may be applied by the normal methods of padding or dyeing, 0.4% or less being the recommended amount necessary. Being fast to mild chlorine bleaching, it can be used in a normal laundry procedure. The product's lightfastness is claimed to be superior to most available market whiteners.

See pages 809-810 for manufacturer's addresses

ORCOCILACRON P

(Organic)

An emulsifiable type of phenol, used as a swelling agent or carrier with the line of Orcocil dyestuffs for the dyeing of Dacron tops, stock, and yarn. Orcocilacron P is said to assist in producing shades of extreme light fastness, provide levelness throughout the length of dyeing and, in these respects and in ease of handling, is claimed to be much superior to other carriers now available on the market.

ORCOMINE A

(Organic)

A cationic softener for use in textile finishing. Orcomine A is substantive and can be readily exhausted onto cotton, rayon or wool from a long bath. It is stated that it is easily dispersible in water, is stable in weak acids and alkalies, has antiseptic properties, and can be applied in any number of conventional procedures, including application with dextrines, starches, and the new acid colloid resins. The product provides a minimum of yellowing and is, therefore, suitable for white goods.

ORCOPON

(Organic)

A fatty acid protean condensate, which is recommended for use in the final aftertreatment for Dacron dyeings. Orcopon can also be used with wool, where it exhibits a protective as well as a softening action.

PENETRON S

(Hart)

A sulfonated ester condensation product said to possess excellent wetting action and good dye leveling properties. Penetron S is recommended by the manufacturers as an assistant for vat or pad dyeing, for package dyeing and for dyeing operations in general to give greater uniformity of shade. Penetron S finds use in wetting-out tubular knit goods in order to sink them prior to the boil-off, as a dispersing agent in the dissolving of dyestuffs in order to give complete solubility and full color value, for plasticizing and leveling adhesives and for wetting-out in desizing rayon, cotton and acetate piece goods.

PERMA FIX

(Refined)

A substantive resinous compound developed to fix direct colors on cotton and rayon. It is compatible with alkaline finishing agents and so may be used with resin and crease resistant finishes.

PERMA KLEER 80

(Refined)

A chelating agent for use in textile processing baths where calcium, magnesium, divalent metal and ferric ions are a problem. The metal chelates formed are stable and soluble in the presence of most precipitating agents. It is soluble in both acid and alkaline solutions.

It is available in 25% and 50% aqueous solutions as well as a spray dried bead.

PERMA PAR W

(Refined)

A nonionic emulsion of silicone resins developed to impart to textile yarns and fabrics a water-repellent finish. The emulsion may be used in combination with resins, antistatic and softening agents. The finish is said to withstand many dry cleanings.

PERMA SET 350

(Refined)

A water-soluble alkyd resin which is employed to impart a stiff ribbon finish on acetate and other synthetic fabrics. It is stated that the finish withstands hot calendering, will not mark-off and will not effect a shade change.

PERMA SPRAY ND

(Refined)

A free-flowing, stable emulsion of paraffin-wax containing zirconium salt. It is said to give a high degree of water repellence to all types of fabrics.

PLIOLITE LATEX 160*

(Goodyear)

A medium high styrene/butadiene copolymer latex especially adaptable to fabric impregnation. The uniform particle size plus high solids content of this latex is said to produce a continuous, hard but flexible, clear film. This means a high reduction in the tendency of ravelling of thread after the fabric is cut. Continuous uniformity as to percent solids, pH and other physical properties is obtained by batch blending. It is stated that by using the latest polymerization techniques in modern reactors, it is possible to supply Pliolite Latex 160 at very economical prices.

* Registered Trade Mark

PLIOVIC LATEX 300*

(Goodyear)

This aqueous dispersion of vinyl resin has been developed for use where chemical inertness, moisture and grease proofness, toughness, flexibility and nonflammability are especially desired. A blend of Pliovic Latex 300 and a Chemigum Nitrile Latex is particularly adaptable to rug backing where improved hand and strength are required. Compounded with various plasticizers, thickeners, wetting and modifying agents, this blend can be applied to backing material by any of various coating methods, or by brushing, spraying, or saturating.

* Registered Trade Mark

POLYCO 494

(American Polymer)

A 55% "plastic starch" resin emulsion finish for laundry application. This product is applied as a dilute solution in the last rinse, and results in a finish which is said to resist removal on subsequent laundering.

POLYCO 496

(American Polymer)

A 40% acrylic copolymer solution for use as a renewable sizing for dry cleaning application. This product is diluted with solvent, and employed as a final dip. Garments so-treated are said to acquire a full luxurioius hand.

POLYCO 497

(American Polymer)

A 35% alkali soluble polyvinyl acetate emulsion for water-resistant finishes. This product may be used in emulsion form or may be diluted and dissolved by addition of a small amount of ammonia to form a clear solution. Films are said to be more water-resistant than ordinary polyvinyl acetates, but dissolve readily in dilute alkalis.

POLYCO 503

(American Polymer)

A 55% fine particle size anionic polyvinyl acetate emulsion which is said to show minimum adhesion to drying cylinders and calender rolls. It is employed as a durable finish for piece goods.

POLYCO 508-W

(American Polymer)

A 20% aqueous solution of an ammonia salt of an alkali soluble vinyl acetate copolymer. It is used as a spot-resistant warp-sizing for loom finished cellulose acetate and other synthetic fibers. Polyco 508-W is merely diluted with two parts water and run without further additions.

POLYCO 1390-15B

(American Polymer)

A 55% nonionic polyvinyl acetate emulsion, plasticized with nonvolatile plasticizers to yield a full hand without excessive stiffness. It is used as a backfilling for coated fabrics, upholstery fabrics, etc.

POLYCO 1411-7B

(American Polymer)

A 55% polymerically plasticized polyvinyl acetate emulsion which deposits soft films on drying. It is used to obtain a full hand without excessive stiffness. The outstanding feature of this product is said to be the nonmigrating tendency of the polymeric plasticizer.

POLYSTYRENE EMULSIONS

(Koppers)

Stable water dispersions of high molecular weight polystyrene, useful in the production of textiles through impregnation and coating. These emulsions are available both with and without plasticizers. Plasticized polystyrene emulsions will form continuous films when dried down at room temperature. The unplasticized emulsions dry down into fine white powder with little tendency to coalesce, but may fuse at elevated temperature. (Technical Bulletin: C-3-180)

PROCOL

(Hart)

A surfactant chemically classified as the condensation product of modified protein and fatty acids. It is said to combine excellent protective and dispersing power inherent in proteins with the detergency of soap without possessing the disadvantages usually associated with soap. Procol is stable to bleaching powder, hypochlorite and peroxide solutions and is used in such solutions to give controlled bleaching action. As a result, bleached fabrics are obtained showing greater tensile and tear strength. Procol is well suited for vat, naphthol and acetate dyeing because of its high dispersing and leveling properties.

PRYM* CR

(Warwick)

A clear aqueous solution of a cellulose reactive compound which is said to give durable stabilization and crushproofing on cotton and rayon with good chlorine resistance properties. In mechanical finishes, this product is said to give durable glazing, embossing, schreiner and moiré effects with minimum effect on fabric tensile properties. Is indefinitely stable to storage and does not require refrigeration.

* Registered Trade Mark

PYRATEX*

(Naugatuck)

A vinyl pyridine latex which is said to provide maximum bonding between nylon, rayon, or cotton cord and rubber. Used in manufacture of tires, hose and belts. Obtainable in compounded or uncompounded forms.

* Registered Trade Mark

QUADRAPEL - R

(Rumford)

A renewable type water-repellent meeting all government requirements. Low foaming properties permit high speed impregnation. The emulsion stability is exceptionally good. May be frozen and re-melted without damage. It is claimed that it is found to be very good on low count fabrics, giving results in repellency and appearance never before attained.

QUADRASET - 105

(Rumford)

A thermoplastic finishing resin producing durable results without special curing. It is stated that it imparts excellent body and hand to all types of fabrics, increases abrasion resistance, and can produce finishes from the soft womenswear type to that of a firm buckram.

QUADRASUDS

(Rumford)

An effective scouring agent for all fabrics and yarns, said to exhibit high sequestering and cleansing properties. Needs no additives for most scouring operations. It is stated that it is very efficient in continuous boil-offs and makes an excellent dyeing assistant. Is also recommended for print soaping and kier boiling.

QUADRATEX

(Rumford)

An exceptional extender for urea and melamine resins that is said to impart body and firmness by chemically combining with the resins. It is stated that it will not lower the tensile strength of fabrics or decrease the resil-

See pages 809-810 for manufacturer's addresses

iency and durability of the resins. Suggested as a builder for durable resin finishes both plain and special, including embossed effects.

QUAKER DIANOL F-50

(Quaker)

Sodium dioctyl sulfosuccinate. Said to be a very high speed wetting and rewetting agent, penetrant, spreading agent and dispersing agent.

QUAKER DIANOL TC

(Quaker)

Said to be a high efficiency fulling agent for fulling of goods directly from the carbonizer. Can be used on goods carbonized in the grease. For use with wool containing acid from the carbonizer, sufficient soda ash should be added to the fulling solution to neutralize all acid present.

QUAKER DIAPENE F

(Quaker)

A thermosetting embossing resin especially designed for Schreiner finishing but which is said to have been very successful for embossed finishes. Good washing durability. It is stated that the high concentration of this product enables users to achieve good durability and hand at relatively low proportion of product in the bath. Recommended application is 4 to 12% solution, curing at 300 to 320°F.

QUAKER DIAPENE NR

(Quaker)

Ribbon finish. A nonalkyd resin consisting of a multiple copolymer having good solution, storage, and pH stability. It is said to impart a crisp, papery hand to acetate fabric. Maintains good luster. Supplied as a white, slightly acid emulsion, this product is applied from alkaline solution by addition of a small quantity of dyehouse ammonia.

QUAKER DIAPENE S

(Quaker)

A combination softener-binder for heavy starch application and starch-pigment treatment. Contains an inherently plastic resin. Is said to impart a dust-free, soft, non-yellowing finish. It is stated that it eliminates the requirement for softeners and rosin-type binders in these heavy starch applications. Supplied as a clear, easily emulsified liquid.

QUAKER PROSOTEX TD

(Quaker)

A Dacron dyeing assistant composed of a carefully selected blend of highly chlorinated organic substances and emulsifiers. Readily dispersible in water. Is said to be efficient for use where high color value is required. Usually applied at .25 to 1.5% concentration in the dyebath. Exceptionally good bath stability.

QUAKER SWEATER SOFTENER

(Quaker)

A cationic sofrening material for use especially on Orlon but applicable to other new synthetics. Is said to impart a soft, lofty hand to spun Orlon fabrics such as sweaters. This product has very low yellowing tendencies for products of the cationic softener class. 2 to 7% on the weight of the goods is recommended for application at approximately 100°F. Compatible with cationic and nonionic finishes.

QUELLIN*

(Paisley)

A cold water-soluble starch. It is stated that it requires no cooking and shows very little gelatinization. It is recommended by the manufacturers for finishing of cottons when full, voluminous hand is desired. The product is said to be perfectly transparent both in solution and film. It can also be used in warp sizing of cottons. In either case it is claimed that the product will replace two to three times its own weight of thin boiling starches and dextrines.

* Registered Trade Mark

QUINDEX DISPERSION 50%

(Nuodex)

A potent fungicide claimed to be useful in meeting many Government specifications for preservation of webbing, canvas, etc., which consists of a fine dispersion of copper 8-quinolinolate (50%) in an inert oil soluble vehicle. Readily dispersible in solvent applied waterproofing and/or fire-proofing compositions.

RAMASIT* CG

(Antara)

A paraffin wax emulsion type compound, which is a nondurable water repellent for use on cotton, wool or rayon fabrics. It imparts a full, dry hand to the fabric. Ramasit CG is applied to cellulosic and animal fibers by padding or from a long liquor.

* Registered Trade Mark

REGAL BEADS

(Armour)

This product is said to have gained wide acceptance in the textile industry for such wet processing operations as scouring, dyeing and desizing. Regal has been found advantageous in combining light scouring and scouring in a single step. By maintaining a good head of suds, it serves as a control on detergent concentration. It is stated that Regal's rapid penetration assists the rapid scouring action necessary for high speed continuous processing. It may be used alone or in combination with high-titer soaps to provide the desired scouring and wetting properties. Effective results can be obtained by either using before dyeing or by adding directly to the dyebath. Regal is recommended by the manufacturers in operations such as desizing where low cost, effective penetrating agents are required but the quantity depends, as in the case of dyeing, on the cloth construction and operation temperature.

REGENT CONING OIL

(Laurel)

A self-emulsifying, anti-static coning oil prepared for the treating of synthetic yarns such as Orlon, nylon, Dacron, Acrilan and acetate. It may be applied to filament yarns as received, and to spun yarns either as received or as an emulsion. It is stated that excellent anti-static and lubricating properties have been built into the product. It contains no mineral oil and is easily washed out in a regular scour.

REMOVER #5403 FOR HOSIERY AND NET FINISHES

(Berg)

A product compounded to remove finishing materials from nylon hosiery and the cleaning of hosiery dyeing nets.

REPEL-O-TEX* ST (Silicone type)

(Onyx)

A milk-white, water-thin dispersion instantly dispersible in cold water, that is said to produce maximum water-repellent effects highly resistant to dry-cleaning and laundering. Repel-O-Fix No. 4, a white paste readily dispersed in warm water with stirring, is supplied as catalyst. It is claimed by the manufacturer that in combination with compatible resin finishes, this water-repellent finish enhances such properties as strength, sewability and hand of fabrics. Features claimed are: ease of formulation and applicability to many fibers and constructions, and extreme durability. No unpleasant odor is generated in the finish while padding, drying and curing. No odor remains on the goods after curing and no after-wash is required, due to this silicone resin treatment.

* Registered Trade Mark

RESIPON AD

(Arkansas)

A thermosetting resin pre-condensate which is said to be highly efficient for use for dimensional control and, also, as a crush-resistant finish particularly on cotton and rayon fabrics. Chemically, it may be described as an acetylene-diurea-formaldehyde complex, and is similar to urea-formaldehyde and melamine-formaldehyde resins, in that it requires an acid catalyst and high temperature curing to produce satisfactory results when applied to fabrics. Resipon AD is claimed to have several advantages over the usual types of resins of this class, which may be described briefly as follows: It is stable in storage for long periods; fabrics finished with Resipon AD show a considerable lower chlorine retention and, therefore, damage to fabrics is held at a minimum; lower concentrations of Resipon AD have been found to produce satisfactory shrinkage control and crush-resistance, as compared to ordinary urea-formaldehyde resins. In physical form, Resipon AD is a practically colorless liquid of moderate viscosity which dissolves readily in water at all temperatures.

RESLOOM E-50

(Monsanto)

A water soluble modified urea thermosetting resin. It is useful for texturizing cellulosic fabrics. Fabrics treated with Resloom E-50 are said to show low chlorine pickup and no yellowing on laundering. The product shows excellent storage life and bath stability and may be used with a wide variety of modifying materials.

RESLOOM M-80

(Monsanto)

A water-soluble methylated methylol melamine with slightly increased polymer size producing a somewhat firmer finish on cotton and rayon fabrics. It is used on cotton, rayon and wool to produce dimensional stability, crush resistance and hand. The low formaldehyde of the product is especially valuable under plant processing conditions.

RETARDAPEX HD 911

(Apex)

A durable gas fading inhibitor for dyebath use. Can be added to the bath either before or after the addition of the dye and will not form a scum on the sides of the dye box. It is stated that it works up readily and will not affect lightfastness of acetate colors.

REXOBOND AW

(Emkay)

A thick, heavy-bodied, highly-active mixture of starch, gums, and resin. The product is said to be an efficient wetter and bodying agent and can be used with urea-formaldehyde and melamine resins to thicken and weight the fabrics.

REXOLE CJ

(Emkay)

A blend of hygroscopic agents recommended by the manufacturers as an economical substitute for glycerine used in finishing with starches, gums, gelatines, and caseins to prevent dusting and powdering.

REXOLE RS

(Emkay)

A brilliant fluid oil readily soluble in water. It contains 65 per cent active matter and has a pH of 5.5. Recommended for use as a softening oil in the finishing of cotton piece goods. It is compatible with crease-resistant resins, starches and gums.

REXOSLIP CONCENTRATE

(Emkay)

A double strength product in liquid form. It is an amino complex resin mixture which is said to impart weight and nonslip properties to rayon and acetate fabrics.

REXOSOLVE #150

(Emkay)

A 100% active mixture of sulfonated oils, aliphatic high-flash solvents, and terpenes. The product is recommended by the manufacturers for cleansing obstinate oil and grease soils and for the removal of oily or fatty matter used in sizing. It is said to be an efficient scouring agent for nylon.

REXOWAX DR

(Emkay)

A white, free-flowing, thin liquid composed of dispersed aliphatic waxers, carefully emulsified. It is compatible with glues, starches, gums, cationic resins, dye-fixing agents, anionic and cationic softeners. It is used in "glaze" type finishing with melamines.

REXOWET RW

(Emkay)

A smooth, flowing fluid gel composed of long chain, highly sulfonated mono- and di-esters, in

proper balance. Product is said to offer very fast wetting and rewetting action. It is stated that it is readily soluble in warm and cold water and can be used with salts, acids, alkalies, and other chemicals without breakdown. It is not affected by hard water. It is recommended by the manufacturers for fast wetting-out before dyeing, for leveling during the dyeing operation, for rewetting in the Sanforizing operation, for increasing enzymatic activity, for increasing absorbency. Product is used in processing fabrics, yarn, and raw stock.

ROSPERSE

(Rich)

A nonionic agent recommended to give a good union between mono and multifilament nylon yarns when dyeing ladies full fashioned and seamless hosiery. It is stated that this material has shown excellent leveling qualities and penetration on folded hosiery, as well as a uniform rate of exhaustion for most acetate colors.

RUXITE A

(Laurel)

A mineral-type oil for use in winder troughs. It is applicable in emulsion form to cotton, spun rayon and spun nylon. It is nonstaining and is said to impart a softness without adding fullness. When used as an oil, it is an excellent heavy-bodied coning oil for filament rayon and nylon. It should be applied from regular oiling or emulsion troughs.

SAFARITONE* WHITE C

(Hilton-Davis)

This product is a new optical bleach for cotton and viscose rayon in a form convenient for application to textiles. Safaritone White C exhibits a bluish fluorescence. It can be applied from a soap bath or rinse operation. Application of Safaritone White C is also effected by padding in becks or incirculating machines. This whitener is manufactured in a form designed especially for ease of solubility during the preparation of the dye bath and subsequent dyeing.

* Registered Trade Mark

SAFARITONE* WHITE WNOA

(Hilton-Davis)

A new optical bleach in a form convenient for application to textiles at low cost. Safaritone White WNOA exhibits level dyeing characteristics and affinity for nylon, wool, and acetate, plus good solubility for ease of dyeing. In addition, Safaritone White WNOA is said to show a remarkable affinity for Type 42 and Type 81 Orlon, with excellent wash and dry-cleaning fastness. Other characteristics to be noted are: ease of handling in the drug room, where all troublesome dissolving with alcohol or sulfuric acid are said to be eliminated. Safaritone White WNOA exhibits a bluish fluorescence. It can be applied in a soap bath or water bath over a range of temperatures and pH.

* Registered Trade Mark

SCOURING COMPOUND #4913

(Berg)

A new synthetic composition of the alkyl aryl sulfonate type containing terpene alcohols. This product is said to have an unusually low salt content and high wetting, foaming and detergent action. It is recommended for all fibers, both natural and synthetic.

SCOURPEN AHX

(Richmond)

A synthetic scouring agent that is said to combine excellent wetting and leveling qualities with unusual detergency. It is recommended for the scour and dyebath of rayon, acetate and the other synthetic fibers as well as for wool, cotton boil-off and after-soaping napthols. It is stated that this material is unaffected by hard water, and is stable in alkalis, and will tolerate very acid conditions for reasonable periods of time.

SETOLE* 205

(Warwick)

Concentrated emulsion of synthetic polymer used for the bodying and stiffening of cottons with water-repellent finishes.

* Registered Trade Mark

SETOLE* 315

(Warwick)

A nonionic emulsion polymer which is said to produce good anticrocking properties on various dyes and pigments. Useful by itself or in conjunction with water repellents.

* Registered Trade Mark

SILVER LUBE ANTI-STATICS

(Carolina)

A series of anti-static agents, durable and nondurable, said to provide greatest protection to synthetic fabrics and fibers. Water and solvents-soluble types tailored to meet specific mill problems. They are said to exhibit excellent aging qualities and to have good bath compatibility with numerous other processing aids. Water types may be applied at any desired temperature after being dissolved at 160°F. Effective at concentrations ranging from 1% solution down to a ratio of three parts per 1000, depending upon plant conditions.

SILVER LUBE FS

(Carolina)

A fatty amide ester softener developed to provide a soft pliable hand with excellent fiber lubrication and sewability characteristics. It is stated that it has no effect on shade and is very resistant to scorching in piece goods finishing. It is said to be particularly effective for the prevention of cracks and streaks in the dyeing of rayons and acetates. It is claimed that its excellent storage qualities without shade and rancidity development, and compatibility with a wide range of weighters, dullers and other finishing aids should prove of merit in both domestic and foreign markets. Dispersible and effective in very small concentrations.

SODIUM PERBORATE

(Becco)

Becco* Sodium Perborate, containing a minimum of 10.0% active oxygen, is a stable, mildly alkaline oxidizing agent. It is used as a bleaching agent for dry cleaning and laundry use, as a component of dry bleaches and as oxidizing developer for vat dyes.

* Registered Trade Mark

SOFTENER #7705

(Berg)

A nonsubstantive softener said to be unusually resistant to oxidation and rancidity. It is stated that it does not effect colors, is stable at the boil and has excellent antistatic and moisture retaining properties.

SOLUMINE-30A

(Soluol)

Cationic softener of quaternary type for use on all types of cellulosic fibers and fabrics.

SOLVITOSE HDF*

(Baisley)

A cold water starch ether derivative. It is stated that it requires no cooking, that it is perfectly transparent in solution and that it shows no gelatinization. It is recommended by the manufacturers for use in conjunction with thermosetting resins for finishing rayons and cottons in order to increase hand. In conjunction with these resins the finish is said to have excellent resistance to laundering. The finished hand increases as the percentage of Solvitose H D F is increased.

* Registered Trade Mark

SONOLENE 500

(Sonneborn)

A new synthetic detergent. Completely salt-free and 100% rinsable, the product, a high molecular weight alkyl aryl sulfonate, in gel form, is said to possses good wetting and outstanding detergent and emulsifying properties. A 1% solution of Sonolene 500 has pH of 7.4 and the product itself, is completely stable throughout the entire pH range. Sonneborn reports that Sonolene 500 has excellent foaming and rewetting properties, and fabrics and yarns processed with this specialty always retain their natural soft hand and finish. The manufacturer recommends Sonolene 500 for the following textile applications: boil-off, scouring and dyeing of cotton, rayon, acetate, nylon and wool; preparation of goods for dyeing; kier boiling; print washing; after-soaping of naphthols and package dyeing. Sonolene 500 is available for shipment in fiber drums and tank-cars. A technical bulletin is available.

SPECIAL-SCOUR-GR

(Soluol)

Scouring agent for removal of graphite and other foreign matter from nylon lace.

STANDYE-FIX D

(Standard Chemical)

A new substantive copper complex dye-fixative agent recommended for the after-treatment of selected cotton and viscose dyestuffs. It is said to offer the following advantages for textile use: excellent wash and lightfastness with minimum shade change; unusual fastness to both perspiration and boiling water; minimum staining of acetate fibers (Standye-Fix D cleans direct color stains off of acetate fibers); fastness to 140-160°F wash test with soap and soda may be obtained if after-treated with Stanset Resins A or B; improves color fastness to hot pressing; improves fastness of cross-dyed effects to both cold and hot water bleeding; easily handled liquid product; stable to storage in closed containers.

STANDYE-FIX R

(Standard Chemical)

A new nonsubstantive copper complex dye-fixative agent recommended by the manufacturers for the addition to resin finishes (urea-melamine formaldehyde types) to obtain the highest degree of wash fastness to soaping of selected direct dyestuffs on both cotton and viscose rayon. This new product is said to offer the following advantages for textile use: excellent wash and light fastness with minimum shade change; improves resistance to perspiration; fastness to 140-160°F wash test with soap and soda; improves colorfastness to hot pressing; improves fastness of cross-dyed effects; reduces catalyst required in resin treatment; extended resin bath stability; easily handled liquid product; stable to storage in closed containers.

STANDYE-FIX W

(Standard Chemical)

A colorless, completely water soluble liquid which is said to be effective in after-treating direct to prevent bleaching in hot or cold water, migration during steaming, pressing, or resin padding. It is also said to impart fastness to perspiration and washing. Since the fixative does not contain a metal salt, it does not cause a marked shade change of the dyestuff treated and it does not impart increased lightfastness to the dye. It is stated that it may be combined with either Standye-Fix D or R to obtain the best all-round fastness to water bleeding, light, and perspiration with the minimum amount of shade change. The effectiveness of Standye-Fix W is not decreased by the presence of salt but the fabric must be free of anion active materials. It may be applied in the dye beck or jig from which solution it will exhaust onto the fabric or it may be applied with the resin solution in one padding operation.

STANSET A

(Standard Chemical)

A readily applied chemical that may be used to finish cotton, rayon, and rayon-blend fabrics. It is claimed to impart to cotton, rayon, and rayon-blend fabrics the following desirable properties: stabilization against shrinking and stretching; resistance to wrinkling, soiling, perspiration odors, and mildew; complete washability; excellent stability to alkaline washing; improved washfastness of selected direct dyestuffs. It is claimed to offer the following advantages for plant application: is stable without refrigeration; is an easily handled liquid product; dissolves easily in water at room temperature; is applied with ease on standard resin finishing machinery. Stanset A is applied to the fabric from a water solution containing a suitable catalyst and if necessary to obtain the desired hand, a stiffening agent. It is compatible with cationic softeners, starches, gums, and polyvinyl acetate emulsions.

STANSET B

(Standard Chemical)

A new product that is said to impart a firm, durable, crease and shrink resistant finish to cellulosic fabric. On cotton, rayon, and rayon-blend fabrics it is claimed to have the following

desirable properties: stabilization against shrinking and stretching; resistance to wrinkling, soiling, perspiration odors, and mildew complete washability; excellent stability to alkaline washing; improved washfastness of selected direct dyestuffs. It is said to offer the following advantages for plant application: Is stable without refrigeration; is an easily handled liquid product; dissolves easily in water at room temperature; is applied with ease on standard resin finishing machinery. Stanset B is applied to the fabric from a water solution containing a suitable catalyst. It is compatible with cationic softeners, starches, gums, and polyvinyl acetate emulsions.

STRIPPER #5402

(Berg)

A stripping agent to remove color especially prepared for nylon, and other synthetic fibers before bleaching.

STYMER LF

(Monsanto)

A vinyl type resin solubilized with ammonium hydroxide which is designed as a durable loom-finish size for dope-dyed acetate yarns. Loom finished fabric made from yarns sized with Stymer LF is said to have a durable stiffened finish which will not water spot. Stymer LF is compatible with a number of softeners or lubricants.

STYMER R

(Monsanto)

A water-soluble vinyl size designed specifically for sizing filament Dacron. Excellent results are said to be obtained in sizing and weaving. Stymer R is compatible with a wide variety of softeners or penetrants and is easily scoured from the greige fabric.

STYRENE-BUTADIENE LATICES

(Koppers)

These latices of the K-500, K-700, and K-900 series contain low, medium, and high styrene copolymers, respectively. They form films which range from soft and flexible to hard and rigid, and are useful in the textile industry because of their high solids content, low viscosity, good mechanical stability, and ultrafine particle size, and are said to give excellent coverage and penetration with ease of handling and application as textile finishes. They may be used in the formulation of nonskid rug backings, as clear coatings, impregnants or binders for fiber glass mat and roving, felts, and as a textile finish. K-500 forms a soft flexible film, K-700 a hard to stiff film, and K-900 a hard to extra-stiff film. (Technical Bulletin: C-3-191-T)

SULFANOLE* NO-9

(Warwick)

An alkyl aryl polyethoxy nonionic detergent, wetting agent, emulsifier and scouring compound in concentrated form. It is said to be useful as kier boiling assistant, penetrant, wetting agent, dyeing assistant, and carbonizing aid. Is stable in acid and alkaline baths and to the presence of metal salts. Useful in bleaching and desizing operations.

SULFANOLE* V

(Warwick)

A 60% active liquid detergent emulsifier, wetting agent, boiloff assistant, water repellent and resin stripping assistant. A modified amine alkyl aryl sulfonate. Is said to be an excellent emulsifier for solvents, waxes, and oils.

* Registered Trade Mark

SYNCAP LVR

(Crown)

A new development in the field of special liquid resins for the production of durable calendered effects on cotton fabrics. Its use is said to insure optimum crease recovery characteristics, maximum retention of fabric strength, excellent dimensional stability and soft hand. It is further said that the chemical nature of the product is such that storing qualities of long duration are assured under normal storage conditions.

SYNTERG #4915

(Berg)

A new synthetic composition consisting of nonionic and anionic compounds. This product is said to be especially useful in scouring and bleaching the finer natural fibers, such as cashmere and fine wools or they are left with a soft hand. Foreign matter is more easily removed. Due to the peptizing action of the product, dirt is prevented from redeposit on the fiber and is floated away in the rinse. When used in bleaching baths, the product acts as a protective colloid, protecting the fiber against the harshening action of the bleach. The resulting bleached fiber is soft and lofty.

SYNTHROPON L CONC

(Organic)

An anionic product used as a wetting agent, a detergent, and with builders for such processes as woll scouring, dye leveling, kier-boiling and general penetrating. Synthropon L Conc is said to be an indispensible assistant in Organic's Dacron dyeing procedure where the choice of such an agent seems to be of major importance.

TAMOL* 731

(Rohm & Haas)

A powdered, 100% active ingredient dispersing agent for pigments and dyestuffs. It is most effective above pH 7.0 but is useful on clay dispersions in the pH range of 5.0-6.0.

* Registered Trade Mark

TANALON

(Tanatex)

A water dispersible carrier for dyeing Dacron* polyester fiber. The makers recommend it for 100% Dacron and for its blends with cellulosic fibers as yarns, knit or woven goods. Complete exhaustion and highest color values are said to be obtained with acetate dyestuffs and spotting to be completely eliminated. One bath dyeings of Dacron and rayon, Dacron and rayon acetate and Dacron and cotton are feasible. Light fastness and other properties of dyestuffs are unaffected because of complete removal of Tanalon by simple soaping.

* Du Pont Trade Mark

TANALON LS

(Tanatex)

A water-dispersible carrier for dyeing Dacron* polyester fiber blended with wool or nylon. It is claimed that Tanalon LS allows Dacron to be dyed to full color value with acetate dyestuffs while keeping both wool and nylon from being stained.

* Du Pont Trade Mark

TANOLUBE* M-33

(Tanatex)

A synthetic softening agent which is claimed to be substantive as well as stable over almost the entire pH range. Manufacturer recommends Tanalube M-33 for use with both acrylic and formaldehyde type resins. It is also used for finishing on the beck. Tanalube M-33 will not yellow whites nor will it affect the lightfastness of direct dyestuffs.

* Registered U S Patent Office

TECHNOSCENT* #17314

(Fritzsche)

A general purpose odor neutralizer for textile finishing oils.

* Registered Trade Mark

TETRINES

(Glyco)

Ethylenediamine tertaacetic acid and its sodium salts. Available as the 99+% pure acid and the 99+% pure tetrasodium salt in powdered forms. Also available in liquid form, in water solutions of the tetrasodium salt in concentrations of 27% and 39%. The Tetrines are chelating, sequestering and complexing agents for multivalent metallic ions such as iron, calcium and magnesium. It is stated that these troublesome trace metal contaminants can be effectively controlled by the Tetrones. They are stable to storage and all temperatures and pH conditions encountered in wet processing operations. They are said to be effective in high concentrations of metallic ions as well as in low dilutions. The Tetrines are used in cotton, wool, rayon and acetate and synthetic wet processing operations. The operations in which the Tetrines are used are kier boiling, continuous boil-off scouring, bleaching, dyeing (vat naphthol, direct, diazotized and developed), stripping and finishing.

TEXTRAPEN

(Tex-Chem)

Textrapen is said to be a highly effective penetrant possessing superior wetting and rewetting properties. It is stated that it is extremely usetul for dyeing operations where it results in level efficient dyeings, and because of its excellent rewetting ability, it has found application in the Sanforizing process. Effective for dyeing of all types of fibers. Textrapen is also useful as a dye dispersant, desizing assistant, and for pigment padding of vat dyestuffs.

TEXTRATERGE

(Tex-Chem)

Said to be a highly efficient surface active agent which is supplied in the form of a paste. It is a built type of detergent containing alkalies, therefore eliminating the need for adding these materials in the dyehouse. Textraterge is said to be especially effective for boil-off of cottons and rayons, and because of its excellent foaming characteristics makes for a rich stable bath.

TEXTRYL

(Tex-Chem)

A synthetic detergent said to possess excellent wetting power, and emulsifying properties. It is useful in dyeing, scouring, print washing and as an emulsitier. When used in conjunction with phosphates or alkalies, it is also useful for boil-off. Textryl is said to have excellent stability to acids, alkali and hard water salts, and is therefore outstanding in the processing of synthetic fibers.

TRITON* AS-35

(Rohm & Haas)

An anionic surfactant containing 30% solids; said to be an efficient detergent, emulsifying, dispersing, and wetting agent. It is recommended for wetting of pigments, emulsifying of waxes and as a degreasing agent.

* Registered Trade Mark

TRITON GR-5

(Rohm & Haas)

Said to be a highly efficient, anionic wetting-rewetting agent containing 60% active ingredient. It can be used in wetting of raw cotton prior to raw stock dyeing, rapid wetting in Sanforizing, dispersing of dyes, fulling of wool, desizing with enzyme, pigment padding of vat dyes, as well as for rewetting and absorbency.

TWITCHELL* 7421 OIL

(Emery)

A new, improved fatty-based oil, Twitchell 7421 is a versatile fiber lubricant for the processing of woolens, worsteds and blends with synthetic fibers. Its main features are claimed to be: 1) effective static control on natural as well as synthetic fibers, 2) ease of scouring which approaches that of the "self-scouring" types, 3) extreme resistance to yellowing and staining, 4) stability of emulsions ranging from 9:1 (water to oil) to 1½:1, 5) fluidity of emulsions in same range of concentrations, 6) excellent lubricity, 7) rust preventative. Its versatility is said to make it applicable on practically all fibers, machines, application methods, and processing procedures.

* Registered Trade Mark

See pages 809-810 for manufacturer's addresses

ULTRAVON* JF

(Ciba)

Stated to be a highly effective, nonionic detergent especially recommended for washing wool in alkaline or acid baths, for kier boiling of cotton and for the scouring of rayon. It is recommended in the "soaping" of vat and naphthol dyeings for their complete shade development and for improving their fastness to rubbing. Solutions of Ultravon JF are neutral in reaction and are said to be stable in the presence of acids, alkalies, hard water, metallic salts, anionic and cationic materials.

* Registered Trade Mark

UVITEX* NA

(Ciba)

A water-soluble, fluorescent whitening agent claimed to be applicable to acetate, nylon, silk, and wool from either mildly alkaline, neutral, or acidic baths. It may be applied either alone or in combination treatments during scouring, peroxide or hydrosulfite bleaching, dyeing, or discharge printing.

* Registered Trade Mark

UVITEX* TW

(Ciba)

A water-soluble, neutral exhausting fluorescent whitening agent recommended for application to fabrics consisting of noncellulosic fibers, such as, wool, silk, acetate, and nylon blended with cellulosic fibers, such as, cotton and rayon. It is stated that it is not affected by peroxide, hydrosulfite, and mild alkalies, and may be applied either in a separate treatment or in a combination treatment during scouring, bleaching, discharge printing, or application of anionic finishing agents.

* Registered Trade Mark

UVITEX* W CONC

(Ciba)

A water-insoluble, fluorescent whitening agent recommended by the manufacturer for application to acetate, nylon, silk, and wool. It is soluble in organic solvents and may be applied during dry cleaning. It is also dispersible in detergent solutions and may be applied during scouring and laundering.

* Registered Trade Mark

VARKON FL

(Arkansas)

Primarily for use in sequestering iron in the high pH range, 11 to 13. It is particularly applicable in operations such as kier boiling where caustic soda is present. Under these conditions, most sequestering agents are said to be relatively inefficient, but, it is claimed, Varkon FL has proved to be outstanding in this respect. The amount to be used in any particular application is, of course, dependent on the amount of iron contamination present. This factor is subject to wide variations even under similar conditions, and it is always wise to employ a sufficient amount to take care of maximum conditions. In most cases, a concentration of 0.05% to 0.1% is sufficient to sequester efficiently, relatively high amounts of iron contaminations. Varkon FL is a clear water-white liquid which is adjusted to a pH range of 10.5 to 11.0.

VAT PRINTING GUM #200

(Rumford)

A cook-up gum of selected starch derivatives for cotton and rayon roller or screen printing. It is said to be exceptionally suited to votator cooking and that prints have very sharp detail. It is claimed that blotch effects show superior coverage and the color yield runs 15% to 25% higher than with prints made with other types of vat thickeners.

VELVAMINE ATS

(Refined)

A new anti-static agent designed for use on all types of textile yarns and fabrics. It is said to provide for rapid dissipation of static changes without alteration of shade, but with good improvement in hand.

VELVAPEX HDS 48

(Apex)

Anionic, substantive softener and anti-static agent. Is said to withstand discoloration on bleached goods treated at 250 deg. F. for 30 minutes. Disperses readily in tap water. Applicable to all fibers and blends.

VINAC BEADS (ALKALINE-SOLUBLE)

(Colton)

The solid form of alkaline-soluble polyvinyl acetate. Vinac Beads are available in viscosities of 3, 7, 10, and 20 centipoises. Uses include textile sizes and finishes utilizing the adhesive and stiffening effects of polyvinyl acetate deposited from alkaline solutions.

VINAC BEADS (SOLVENT SOLUBLE)

(Colton)

The solid form of polyvinyl acetate, soluble in alcohols, chlorinated solvents, esters, hydrocarbons, ketones and other organic solvents. Vinac Beads are available in viscosities ranging from 7 to 1000 centipoises. Vinac Beads are colorless, odorless, and tasteless and are said to have excellent stability to light and aging.

VINAC WR-20

(Colton)

A modified polyvinyl acetate emulsion for use as a textile size and finish and base for adhesives and coatings. WR-20 is easily compounded and in the textile field particularly, it is said to offer a finish of good permanence and hand, which will not soften on dry cans or heat shoes. It is claimed that WR-20 has wash resistance and stiffening properties which are not found in ordinary polyvinyl acetate emulsions.

VINOL FH-100

(Colton)

A fully-hydrolyzed, low viscosity polyvinyl alcohol. The nongelling characteristics of Vinol FH-100 are said to impart excellent machining and spreading properties to finished formulations. Clear, strong, transparent and grease-proof finishes and coatings are deposited from water solutions.

VINOL FH-600

(Colton)

A fully-hydrolyzed, high viscosity polyvinyl alcohol, effective as a warp size in the textile industry. Vinol FH-600 is said to impart oil and solvent resistance in special coating applications. FH-600 permits ease of dissolving and decreases dusting. It is also used in conjunction with melamine and urea formaldehyde resins in producing stain-proof and wrinkle-resistant finishes on acetates and rayon and for producing Schreinered and deep-embossed effects on cottons.

VINOL PA-5

(Colton)

A partially-acetylated polyvinyl alcohol resin which can be used as a size for many textile fibers, including acetate and nylon. PA-5 is low in viscosity, water-soluble and non-gelling. Clear, strong, transparent and grease-proof finishes and coatings are said to be deposited from Vinol PA-5 water solutions.

VINOL PA-20

(Colton)

A partially acetylated, medium viscosity, polyvinyl alcohol resin, which is used as a size for yarns such as nylon and acetate. The Vinol PA-20 particle size permits ease of dissolving and decreases dusting. Nongelling characteristics of Vinol PA-20 are said to impart excellent machining and spreading properties to finished formulations.

VINOL PA-40

(Colton)

A partially acetylated high viscosity polyvinyl alcohol used as a size for yarns such as viscose, cuprammonium, and cotton. Vinol PA-40 has the ability to coat yarn with a strong, flexible film, which is water soluble. This grade is said to be more effective as a warp size because of its high viscosity.

VULCAFOAM AEL-9001

(Alco)

A natural-synthetic blended latex compound designed for use in the manufacture of foam rubber applied to fabrics. This product has found successful application in the carpet industry as a foam underlay, in addition to the usual foam applications.

VULCANOL* CM-3001

(Alco)

A synthetic latex compound, designed specifically for the upholstering trade, that is already finding usage covering a wide range of applications. On open-face friezes, where pile anchorage is most necessary and where added strength must be imparted, Vulvanol CM-3001 is said to enable such loosely constructed fabrics to be successfully scoured and dyed. On more conventional fabrics where a far lighter application is desired in order to resist fraying in handling and cutting of the fabric, Vulcanol CM-3001 is highly recommended by the manufacturers because of its high stability at lower concentrations.

* Registered Trade Mark

WARKEELATE

(Warwick)

A series of specific and highly efficient sequestering agents based on ethylene diamine tetracetic acid and its salts. Available in liquids and in some cases dry form.

WARCO* A-292

(Warwick)

A stable liquid resin which is soluble in water, alcohols and selected solvents. Can be used to insolubilize gums, starches, cellulose ethers and proteinaceous materials. It is said to have excellent adhesion to textiles, wood, paper, and glass. Shows pigment binding properties by itself or when used with alkyd resins in coatings.

* Registered Trade Mark

WARCO* A-298

(Warwick)

Said to be a very effective antistatic agent for plastics and textile surfaces. Available in anhydrous, concentrated, or water solution forms.

* Registered Trade Mark

WARCO* 287-A

(Warwick)

An aqueous solution of cellulose reactant which is useful for rendering viscose fibers, yarns, fabrics or films soluble in water for specialty uses.

* Registered Trade Mark

WARCO* GFN-2

(Warwick)

Said to be an extremely effective and low cost graphite remover and cleansing agent for nylon and other laces.

* Registered Trade Mark

WATER QUEEN GRANULATED SOAP

(Colgate-Palmolive)

A 39°C titer neutral soap made from unusually pure distilled fatty acids. Contains 90% anhydrous soap. Recommended for detergency operations where water temperatures of 145°F or less are employed.

WATER-SHIELD "L"

(Kali)

Water-Shield "L" is a low cost stable water emulsion of wax and aluminum salts. This product produces a water repellent finish of the semi-durable type, suitable for most textile fab-

See pages 809-810 for manufacturer's addresses

rics. Being in liquid form, Water-Shield "L" is simply diluted to the desired concentration with cold water, and the temperature of application is generally from 110° to 130°F. The concentration of the finish bath should contain from 5% to 10% of Water-Shield "L" by volume, depending upon the type of goods being processed, and the degree of water repellency desired. The goods are padded through the solution, squeezed, and dried in the customary manner.

WHITE CELLOLUBE*

(Tanatex)

A paste cationic softener developed for finishing both white and dyed half hose knitted of cotton or rayon. Manufacturer states that white Cellolube will not yellow white cotton hose and that it is compatible with optical whitening agents.

* Reg U S Pat Off

WHITE CELLOLUBE* FDN

(Tanatex)

A liquid cationic softener developed especially for the softening of dye nets used in full fashioned hosiery dyeing. The application of White Cellolube FDN is said to be so simple that it is practically foolproof and snags are substantially reduced.

* Reg U S Pat Off

WICALOID* AW

(Wica)

A new, especially compounded latex that enables processors to use fabrics that contain many of the synthetic fibers in coatings and impreanating. Its special curing system is said to aid in the elimination of staining of synthetic fibers that is normally attributed to offensive systems. Dyers find Wicaloid AW of interest because of its compatibility with the majority of metal containing dyes. Wicaloid AW is recommended by the manufacturers for coating and impregnating goods which are to be further wet processed at elevated temperatures and over wide pH ranges. Wicaloid AW is grouped with others in a series to offer complete control of hand and texture.

* Trade Mark Reg applied for

WICASTAT*

(Wica)

A group of chemical compounds especially recommended by the manufacturers to protect against the problems of static electricity in synthetic fibers and fabrics. The use of Wicastat in either a water or solvent system is possible. Cleaner goods, increased production and less personal discomfort are said to be possible through its usage in very slight concentrations. Wicastats are of considerable interest due to compatibility with latices and other film forming elastomers that are particularly adaptable to the upholstery, rug and drapery field.

* Trade Mark Reg applied for

XYNO RESIN G-36

(Onyx)

An aqueous solution of a partially condensed modified urea-formaldehyde resin. Properly applied and cured, Xyno Resin G-36 is said to impart highly durable stiff resilient effects on light synthetic constructions, notably nylon. The finish is claimed to withstand repeated dry cleanings or launderings at the boil. It reinforces the effects achieved by glazed-, embossed-, crush-resistant- and stabilized finishes by adding a durable pleasing resilient body and crispness.

XYNOTAF

(Onyx)

A slightly viscous light amber colored solution capable of imparting a characteristic rustle and feel associated with pure silk taffeta. No effect on color, and provision of a clear face and rich luster are claimed. It is compatible with textile softeners, and in combination with certain synthetic polymer resins a wide range of stiffness and surface effects are obtainable

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"ZELAN"* FF

(Du Pont)

The well-known durable water-repellent "Zelan"* AP Paste has now a companion product. This is a modified AP Paste type designed for use in mills where difficulty has been encountered in obtaining satisfactory final drying operations necessary for processing fabrics with "Zelan" AP Paste. This new type is said to be ideally suited to use on corduroys, heavy pile fabrics and similar constructions which have previously been difficult to treat satisfactorily.

* Registered Trade Mark

"ZELEC" ** DP

(Du Pont)

A durable antistatic agent possessing similar characteristics to "Zelec" DX and is designed for padding application and drying without additional processing. It provides a firmer hand on knitted synthetic fibers than the DX type.

** Trademark

"ZELEC" DX**

(Du Pont)

A new durable antistatic agent that minimizes static electricity during finishing operations, particularly on synthetics. It is stated that it reduces dust and lint settlement, helps keep fabric from being electrically attracted by parts of processing equipment and assists in keeping garments fresh and neat longer during consumer use. "Zelec" DX is durable since it resists removal by soap and water. It will not cause discoloration of white fabrics nor affect brighter colors and pastels during storage.

** Trademark

"ZELEC" NE**

(Du Pont)

A water-soluble anionic type antistatic agent designed for use on all types of textile fibers, yarns or fabrics which possess inherent static propensity. It is said to be particularly suitable for use in reducing or eliminating static difficulties during the processing of hydrophobic textile fibers such as "Orlon"* acrylic fiber. It does not interfere with subsequent dyeing, and is removed from the fiber during dyeing, laundering and dry cleaning.

** Trademark
* Registered Trade Mark

"ZELEC" NK**

(Du Pont)

A water-dispersible anionic type antistatic agent designed for the reduction or elimination of static on all types of textile fibers that possess this propensity. The product possesses marked lubricating properties but limited softening qualities. It has no adverse effect on subsequent dyeing and is readily removed from the fibers during this operation and also by laundering and drycleaning.

** Trademark

EQUIPMENT

(Listed alphabetically according to manufacturer)

AUTOMATIC RECORDING SPECTROPHOTOMETER

(Beckman)

Beckman's new "robot" spectrophotometer is said to run analyses practically unattended with accuracies matching or exceeding manual operation.

The instrument is built around the single-beam monochromator of the Beckman DU Spectrophotometer. Under test since completion of the original design in 1951, the instrument was operated for several thousand delegates at the Ohio State University Symposium on Molecular Structure and Spectroscopy last June. It was also exhibited in September at the Instrument Society of America show in Chicago.

The Model DR Spectrophotometer automatically measures and records percent-transmittance in the 210 to 1000 mu region of the spectrum—most generally useful for colorimetric and spectrophotometric analyses. The entire ultraviolet to near-infrared span is broken up into a variety of wavelength ranges selectable by the instrument.

As many as three samples can be run simultaneously, with each curve plotted in a different color. According to the manufacturer, the Model DR will scan any given range at speeds exceeding the fastest manual plotting. It reportedly takes 8 seconds to record a point for one sample, 10 seconds for two samples and 12 seconds for all three. Spectrograms are made on standard notebook-size graph paper.

Operation of the Model DR is at highest sensitivity (or resolution) of which the instrument is capable for optimum signal-to-noise ratio.

It is pointed out that, once its controls have been set, the instrument can run by itself for a whole day—with an operator needed only to change samples, chart paper and scanning regions.

The "robot operator" of this instrument is said to make it possible to vary the number of points plotted automatically in any given range. Using few points the analyst can shortcut through unnecessary detail or run quickly through a spectrum for the highlights. He can then re-scan particular areas at close spacing for the detail which interests him.

The automatic unit of the instrument can be attached to any standard Model DU Spectrophotometer, with no change in monochromator required.

Beckman "Robot" Spectrophotometer

BUTT-SEAM TACKING RANGE

(Birch)

Birch Brothers has introduced a new, high-speed butt-seam tacking range for the tacking selvedges of tricot, synthetic and worsted fabrics, preparatory to wet processing, such as dyeing and fulling.

With a butted seam tacking the tendency of selvedges to double over along the line of the conventional tacking is eliminated, it is claimed, with resultant savings in time and effort.

The machine operates the same as conventional tacking machines with a cloth doubler, draw rolls and folder, but in place of a chain stitch sewing head, uses a butt-seam head preceded by selvedge uncurling rolls.

CHAIN STITCH TACKING HEAD

(Birch)

For tacking selvedges of fabric together for wet processing, such as dyeing and fulling, Birch Brothers has introduced the high speed ball bearing counterbalanced chain stitch tacking head. The tacking head is reported to be capable of a speed of 60 yards per minute without undue wear and vibration. It is said to operate the same as regular tacking machines and to be adaptable to them.

COMBINATION MACHINE FOR TREATMENT AND VACUUM EXTRACTING OF COTTON-TUFTED CARPETING

(Birch)

This unit is used for applying finishes to cotton-tufted carpeting, extracting and folding. It is said to give complete penetration and saturation quickly. The extractor consists of 15-ton capacity squeeze rolls and is followed by a vacuum extractor of patented construction for removing additional moisture and raising the pile.

By use of separate controls for each end of the squeeze rolls, pressure may be regulated and kept uniform.

SPREADER AND GUIDER OR CONICAL OPENER

(Birch)

A stainless steel, electrically controlled spreader and guider* or conical opener for use on dye kettles for the dyeing of pile fabrics, tufted cotton carpets, and other fabrics to be dyed in the open width.

The machine is also used ahead of squeeze rolls and other equipment.

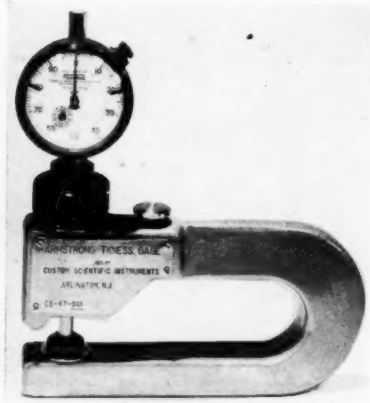
* Patent applied for

ARMSTRONG THICKNESS GAGE

(Custom Scientific)

This portable thickness gage was designed by Armstrong Cork Company to accurately inspect the thickness of sheet material. It is said to be of sturdy and well proportioned construction, the frames being heat-treated aluminum castings. It reportedly has many potentialities for production and inspection work. A unique feature is its rotating indicator, which furnishes full service of the dial in any position.

The standard instrument is supplied with an indicator set up for ½" travel with 0 to .100" per revolution with .001" divisions. This may be changed to read 0 to .050" per revolution with .0005" graduations, if desired.



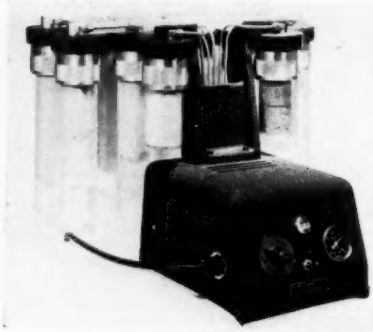
Armstrong Thickness Gauge

CELANESE WRINKLE TESTER

(Custom Scientific)

The Celanese Wrinkle Tester was developed at the Summit Research Laboratories of the Celanese Corporation of America and designed and manufactured under agreement by Custom Scientific Instruments, Inc.

The Wrinkle Tester aids in evaluating the resilience and wrinkle behavior of fabrics under conditions very similar to those occurring in actual use. It takes into account that, in actual wear, fabrics, due to their inherently different wrinkle resistance, display wide differences in the pattern and degree of wrinkling. The instrument simulates the clenched fist test by performing a repetitive cyclic wrinkling action under precisely controlled conditions.



Celanese Wrinkle Tester

ELECTRICAL RESISTANCE TESTER

(Custom Scientific)

The problem of decreasing the high static propensities displayed by some fibers is a matter of decreasing the surface electrical resistances of those fibers by use of suitable finishes.

The Electrical Resistance Tester was developed to measure the electrical resistance of fibers, films and fabrics. This tester is self-contained, portable and needs no external power supply. The instrument is said to be useful over the range of 1 megohm to 50,000,000 megohms.

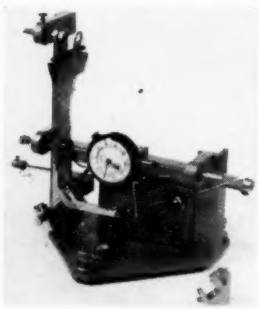
Custom Scientific Electrical Resistance Tester

LOW-PRESSURE THICKNESS GAUGE

(Custom Scientific)

The Low Pressure Thickness Gauge was designed especially for determining the thickness of soft, bulky fabric. A specimen is held vertically between an anvil 1 sq cm in area and a presser foot connected to a micrometer dial graduated in mils. The anvil is part of a lever arm arranged so that both arms are of equal length. Therefore, a weight hung in the notch of the horizontal arm gives direct pressure measurements in g/cm². Weights of 5 g, .1 lb and .01 lb are supplied.

This instrument has two advantages inherent in its construction. First, the fabric is suspended vertically. This is said to eliminate any compression of the fabric under its own weight. Second, the fabric itself determines the end-point of the test since both presser foot and anvil are free to move for the duration of the test. Thus, any compression of the fabric is related only to its construction and the fabric is allowed to seek an equilibrium position during test.



Custom Scientific Low-Pressure Thickness Gauge

THERMAL CONDUCTIVITY PROBE

(Custom Scientific)

This unit, designed by Pittsburgh-Corning Corporation, is based on the fact that the temperature, at a line heat source in a block of insulating material, rises an amount depending on the thermal conductivity of the material. Hence, it is essentially a line heat source with a thermocouple to measure its mid-length temperature change. The two elements are enclosed in a protective sheath to provide a practical instrument.

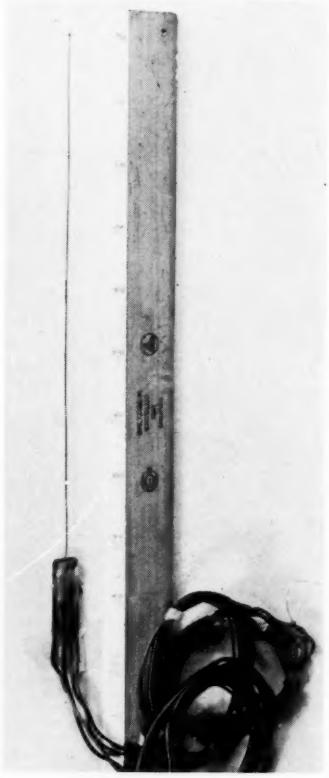
The Probe is 8½ inches long and .020 inches in diameter. A molded plastic block is used at one end to support the necessary lead wires. The plastics used in the construction allow operation from —50 to +200°F.

MECHANICAL COTTON BLENDER

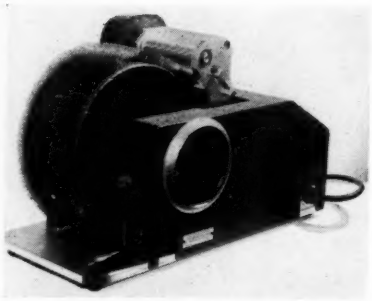
(Custom Scientific)

This instrument for blending cotton samples was developed by the Cotton Branch, production and Marketing Division, U S Department of Agriculture. Now redesigned for marketing commercially, the Blender will handle 10-gram samples.

In comparison with hand methods, the new



Pittsburgh-Corning Thermal Conductivity Probe



USDA Mechanical Cotton Blender

method employing the blender is said to be 20 times faster. About one hour is required to make 8 samples, it is claimed.

Principal feature of the motor-driven mechanical blender is an adjustable feed plate in combination with a fluted feed roll, which feeds a sample into a rotary blending cylinder covered with stripper-wire clothing. The feed plate extends part way under the feed roll, its nose projecting toward the blending cylinder. An extension plate, hinged to the bottom of the feed plate, provides a means of adjusting for long-staple cotton (over 1 in).

AUTOMATIC PRINTING ROLLER REGISTERING DEVICE

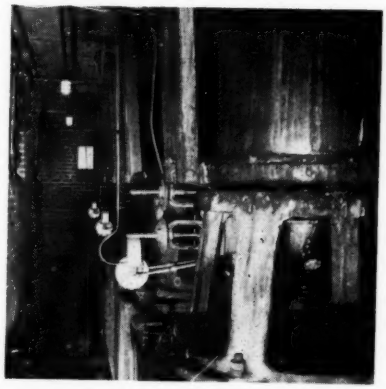
(Deck)

The manufacture of a new type roller printing machine has been announced by Deck Textile Machine Makers, Zurich, Switzerland, and Mulhouse, France. The inventor claims increased production by omitting any manual operation in registering the engraved rollers and replacing the standard procedure by mechanical means, thereby reducing the time otherwise necessary for this work to a fraction. Principally, the center cog wheel does not directly propel the wheels attached to the single printing rollers, but this movement is transmitted to a differential drive and from there to the rollers. This special device has the effect of immediately stopping all the rollers at the same time. As the machine is started the single rollers are readily accelerated or retarded by the action of an electromotor.

D/P CELL TRANSMITTER WITH ELBOW-TYPE TAPS

(Foxboro)

This differential pressure transmitter is used to measure the flow of dye liquor circulating in a beam, package or raw stock dyeing machine. It reportedly enables the operator to maintain proper flow in gallons per minute per pound of yarn on machines equipped with bypass or throttling valves. The manufacturer points out that, since beams of different densities can be recognized and compensated for, it reduces the danger of blowing beams and damaging the yarn. Flow is measured continuously in either direction: outside-in and inside-out. The transmitter is connected by tubing to two pressure taps on a 90° pipe elbow in the flow line and the flow measurement received at a recorder or controller on the operating floor.



View of three Foxboro d/p cells measuring the flow of dye liquor on Gaston County beam dyeing machines at Dundee Mills, Inc, Griffin, Ga. The d/p cell piping is arranged to enable mill personnel to check the rate of dye liquor flow to each kier of these two-kier machines.

MODEL 40 C-HC CYCLELOG CONTROLLER

(Foxboro)

An instrument developed for automatic control of the entire dyeing process—heating, holding, and cooling. The new controlled cooling feature is of particular interest in the dyeing of piece goods and hosiery that must be cooled back slowly. Controlled cooling is said to prevent the crease marks or crow's feet that result from the shock of too rapid cooling. The instrument reportedly permits the dyer to duplicate precisely any normal time-temperature schedule, and it is claimed that sensitive synthetic fibers can be processed in complete safety and maximum color uniformity.

"TEFLON"* COATED WET PROCESSING EQUIPMENT

(General Plastics)

The success of "Teflon" coated slasher cylinders over the past few years has prompted trials with "Teflon"-coated wet-processing equipment, and they are said to indicate considerable time savings in cleaning along with increased overall efficiency.

In the case of "Teflon"-coated dye troughs, the dyestuff is wiped out or washed out readily because of the nonstick surface presented. "Teflon" coating is also being tried on dry cans and rolls.

* Registered trademark of E I du Pont de Nemours & Co, Inc.

ELECTRONIC TEMPERATURE CONTROLLER

(Honeywell)

The flexibility provided by the different modes of control available in Honeywell's new electronic temperature controller is expected to make it applicable to a variety of industries demanding precise and consistent temperature control but not requiring the functions of indicating or recording, e g, in the textile industry—bleach tubs, piece dye machines, etc. It has a range —100°F to 600°F.

The new controller (called the New 077), which employs the resistance thermometer principle, is flexible in the type of control provided with a single-point model. For example, the control method may be on-off, two-position, floating or proportioning; the motor or final control element determines the type of control used. The control adjustments are accessible for easy resetting. A pair of red and green signal lights is another feature. The green light glows when the temperature at the bulb is below the set point—the red light when the temperature is above set point. This gives a broad indication of where the variable is, for when both lights are out, the variable is at the set point.

In addition to the single-point model, the new controller is also available in cascade control models utilizing two bulbs. The effect of the secondary bulb in this model may be changed relative to the primary one. Both the single point model and the cascade model are available in three ranges: —20 to 220°F; —20 to 300°F, and —100 to +600°F. Sensitivity for the first two ranges is ±0.1°F, and for the third range ±0.9°F.

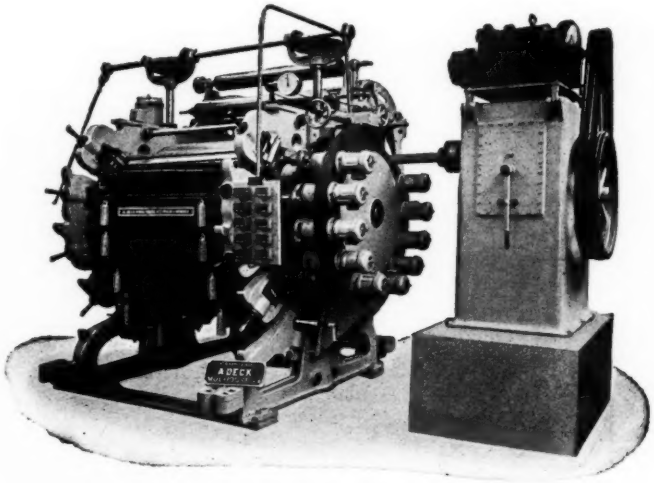
"PACKAGE" CONTROL UNITS FOR SIZING

(Honeywell)

This "packaged" control system for textile size cooking applications, comprises a single-pen, integral cam thermometer program controller with control valve and air accessories. Control lights, built into the door of the instrument case housing the controller, are actuated by an adjustable sequence switch to indicate completion of a program. The switch simultaneously opens the cam motor circuit to stop its rotation.

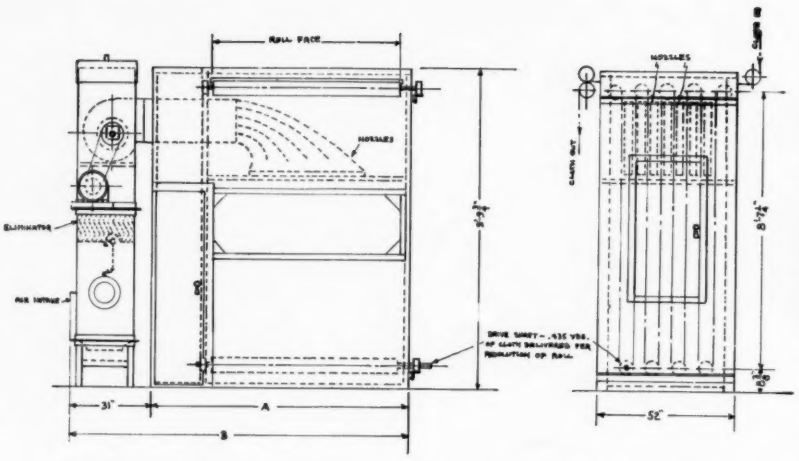
It is claimed that, with this system, it is only necessary to combine the ingredients, set the program cam and open the steam valve. The temperature of the size is automatically controlled according to the desired program. When it has reached the end of the cooking period the green signal light goes out, the red light comes on and the temperature is maintained at the "hold" value as long as desired, the manufacturer states.

The "packaged" control units were conceived to take advantage of the uniformity among many process operations. The "packaged" systems are set up to enable a processer to select an instrumentation system on the basis of overall function.



Deck Automatic Printing Roller Registering Device

See pages 809-810 for manufacturer's addresses



Schematic of Hunter Temperdaire Cooling and Conditioning Machine

TEMPERDAIRE CLOTH COOLING UNIT

(Hunter)

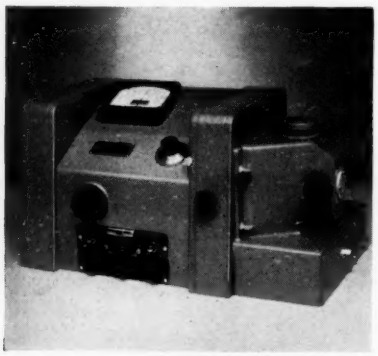
This unit finds application in processing resin-treated fabrics after drying and curing. It is said to "fix" the cloth at the most desirable point, cooling it to normal temperature while conditioning.

In operation, water cooled air is blown upon the cloth through special nozzles. This moist cold air immediately reduces the cloth temperature to a predetermined point and also adds to the moisture content of the fabric which, at this point, is generally below desirable limits.

COLOR-EYE (MODEL "C")

(Instrument Development)

The Color-Eye, an industrial light and color comparator originally made available to industry in 1949, has been redesigned with proven features retained and new features included at a reduced cost. New features include a) a fifteen position filter turret with optical zero compensation, which allows a selection of tristimulus and narrow band interference filters, b) facility for integral forced cooling of temperature sensitive samples, c) improved commutator construction, d) choice of diffuse or direct illumination of sample, e) optional smaller area viewing, and f) improved electronic and maintenance features.



IDL Model "C" Color-Eye

CAUSUL* METAL

(Lunkenheimer)

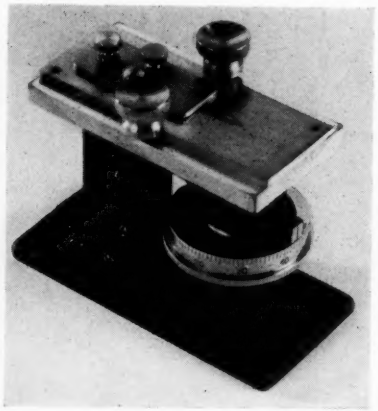
An austenitic cast iron developed by Lunkenheimer and used in the manufacture of Lunkenheimer "Causul" Metal Gate Valves for corrosive service. "Causul" Metal Valves have been used in the textile industry for handling alkaline liquors, sulfuric acid (in the absence of copper salts), and detergents. They are also used for handling alcohols, ammonia liquors, bicarbonates (acid and alkaline), calcium chloride, caustic soda, carbon tetrachloride, creosote, fatty acids and oleic acid, glycerine (including salt crudes, sulfate and kraft liquors), paper mill liquors (black, green, white), potassium hydroxide, pyroligneous acid, rayon solutions (in absence of copper salts and acetic acid), resin oil, sea waters, sewage, sludge acids (petroleum and gas), tankage, zeolite, and sodium aluminate treated waters. Lunkenheimer "Causul" Metal Valves are available in sizes from ½" to 14".

* Registered Trade Mark

IMPROVED MICO FIBER MICROTONE

(Mico)

The Mico Fiber Microtome has been improved by the addition of a sturdier tongue and hard-chrome plating of the top plate. The newly designed tongue reportedly permits more rapid packing of the fibers to be examined. The hard-chrome finish on the top plate is an aid to the operator in sectioning of the fibers.



Mico Fiber Microtome

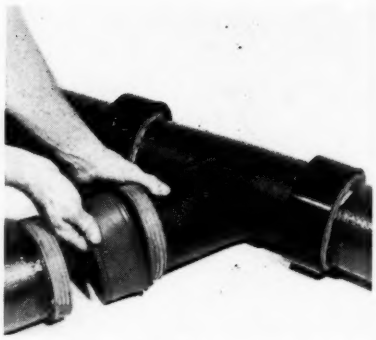
"SCREW-SEAL" INDUSTRIAL PIPE

(Robinson)

This joint and ceramic pipe is designed for industrial use in conveying liquids and gases. It combines plastic with vitrified clay to form a joint that is reported to be leak- and infiltration-proof.

Extra heavy wall thickness is a feature of the Robinson industrial clay pipe, which is manufactured with a threaded joint made of Plastisol, a vinyl resin dispersed in a fluid material, which becomes a rubber-like plastic upon heating. It is said to be resistant to 54 corrosive acids and most noxious gases.

Available in 4", 6", and 8" internal diameters, the "Screw-Seal" employs the matching thread principle.



"Screw Seal" Industrial Pipe with Polyvinyl Chloride Collar

BLEACHING RANGETTE*

(Rodney Hunt)

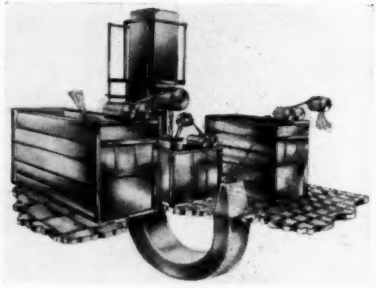
In collaboration with Becco and Du Pont, Rodney Hunt has developed the continuous Bleaching Rangette to meet the demand for a continuous bleaching range in operations from 240 to 1,500 pounds per hour.

The Rangette size washers, Tensitrol saturators, and J Boxes reportedly can be arranged in a floor area space as small as 15 x 21 feet. Production capacity is said to be completely flexible from 30 yards per minute up to the capacity of the smaller conventional bleaching ranges.

It is pointed out that light or heavy fabrics can be handled continuously in quantities of 240 to better than 1500 pounds per hour under most conditions, if full-size units are combined with Rangette units.

According to Rodney Hunt, the Rangettes incorporate the advantages of the patented Tensitrol washer, which, by relaxed conveyance of the fabric, is said to permit extraordinary penetration of water and high elimination of chemicals from the rope.

* A trade name of the Rodney Hunt Machine Co.



Rodney Hunt Bleaching Rangette

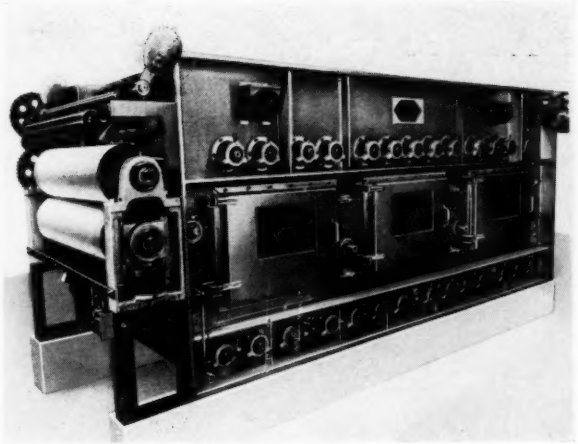
PAD-STEAM CONTINUOUS DYEING RANGE

(Rodney Hunt)

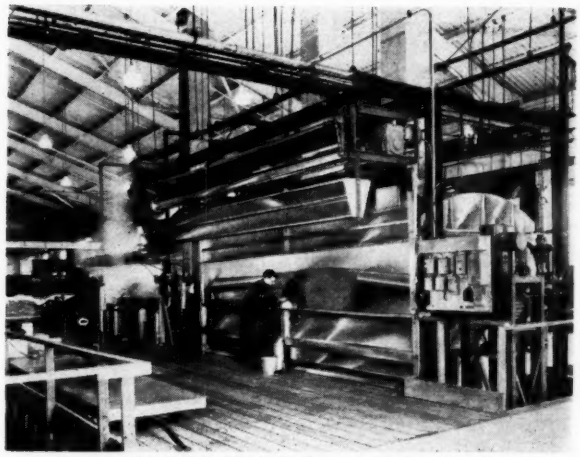
The Tensitrol Steamer—developed in 1953 in collaboration with E I du Pont de Nemours & Co, Inc, originators of the pad-steam process—combines with Rodney Hunt padders and the patented Tensitrol (R) washer for the continuous dyeing of cottons, acetate and rayon mixtures and blends with vats, indigosols, sulfurs and naphthols.

Application of the principle used in the Ten-

See pages 809-810 for manufacturer's addresses



Rodney Hunt Pad-Steam Continuous Dyeing Range



Rodney Hunt Tru-Shade® Carpet Dyeing Machine

sitrol washer, with sensitive variable-speed drive, is said to eliminate wrinkles, creases and tie-ups in dyeing a wide variety of goods. The top, adjustable throat, and heating coils are so designed, positioned and guarded as to prevent drip or blowing of steam on the goods.

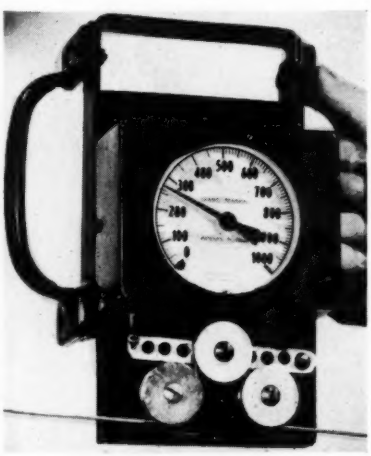
All rolls are externally mounted on antifriction bearings. Face seals are designed to further reduce friction and leakage, and eliminate packing. Cooling, threading and cleaning are facilitated by large access doors, it is claimed, and vapor-proof lights aid inspection and cleaning. All-stainless-steel construction combats corrosion and leaks. Steam-sealed goods entrance and liquid-sealed exit keep heat high and uniform.

TRU-SHADE® CARPET DYEING MACHINE

(Rodney Hunt)

Rodney Hunt Tru-Shade carpet dyeing machines were specifically designed to meet mill requirements for piece dyeing of cotton rug and carpet fabrics under consistently high temperatures, while keeping the material open and accurately centered by means of an unusual spreader. Sizes run from 6 to 20 feet in width. Normal piece load in installations of the 20 ft machine is 120 yds, though the 6 ft tub is said to run successfully with 160 yd pieces. The unit, fabricated entirely of stainless steel, is equipped with pneumatically-operated front and back doors actuated by an air lever.

Four perforated steam pipes, located both front and back beneath a false bottom, are designed to induce circulation of dye liquor and maintain an even temperature in the dyebath. Temperatures can be raised from room temperature to 210°F in 35 minutes with 125 psi steam, it is claimed. It is reported that front-to-back temperature variance is rarely more than 2°F.



Saxl Tension Meter
Testing a Filament Material

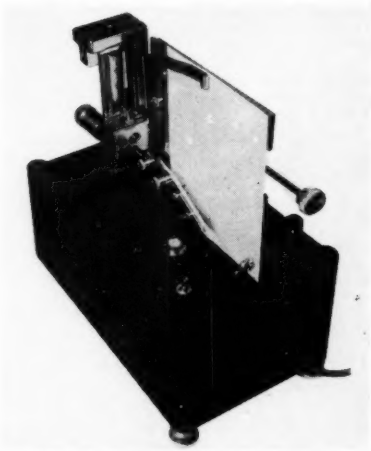
SAXL TENSION METER

(Tensition)

A new "ruggedized" tension meter, reportedly covering capacities of 20 pounds and more, has been added to the line of Saxl Tension Meters.

The unit is designed to accommodate ball-bearing rollers of any reasonable width so as to measure the tension of rayon tows and similar materials up to 2" wide and also strips of moving picture film, insulated-, narrow fabric-, and paper tape of any reasonable width.

The instrument differs in the design of the movement from prior construction in that the gear train and other sensitive equipment are omitted. A basically new movement is used.



Clemson Flat Bundle Fiber Tester

CLEMSON FLAT BUNDLE FIBRE TESTER

(Scott)

This tester for tensile testing of cotton fibers in flat bundles incorporates several innovations.

The instrument was devised by Dean Hugh M Brown of Clemson Agricultural College. It is said to improve upon existing fiber test methods while incorporating the following advantages:

1) Applies constant rate of load to sample.
2) Sample gauge length may be varied from 0 to 10 mm.
3) Motor driven, with control for either single tensile test or continuous hysteresis cycles.
4) Breaking load and elongation are recorded instantly without lag.
5) Produces a permanent record, reading directly in grams, useful for filing and reference.

The instrument makes use of the accustomed clamp equipment and sample techniques that are familiar to cotton mill technicians. On the Clemson instrument, the sample clamps are positioned in the *vertical* plane. The loading system is dead weight and at a constant rate of increase, actuated by a motor drive with simple operating controls, the load rate being 1,000 grams per second. The indication of the instantaneous load upon the sample is continuously drawn upon a form which is inserted in a suitable holder. Sample elongation and breaking load are also indicated by the graph, allowing the operator to determine the breaking load directly in grams. The test graph provides a permanent record. Provision is made for sliding the form to five successive positions in the holder, for inscribing up to five tests on the single chart.

The new machine brings to this specific test the ability to vary the gauge length. The sample clamps may be inserted with faces in conjunction for bundle tests at zero sample gauge length or they may be separated up to 10 mm apart for elongational testing upon that gauge length. A scale inscribed on the clamp holder indicates the amount of clamp separation and shows the sample gauge length without computation.

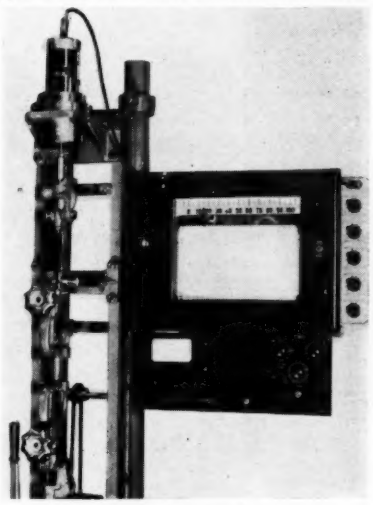
The machine can perform either single tensile tests, with mechanical stopping at the end of a single cycle, or hysteresis tests, the latter being accomplished by a twist of the control knob. Provision for reversal of the moving clamp at less than full load may be included.

The instrument is portable and requires a single electrical connection to 110-120V lighting circuit and a table space of 15" x 9".

INERTIALESS WEIGHING SYSTEM

(Scott)

The Scott Inertialess Weighing System is a conversion kit for changing existing constant-speed-of-pull testers, in the field, to perform tests on the constant-rate-of-extension principle, with ability to compress or magnify either the load or extension on the recording chart. The system may be installed on Scott Tester Models



Scott Accrometer

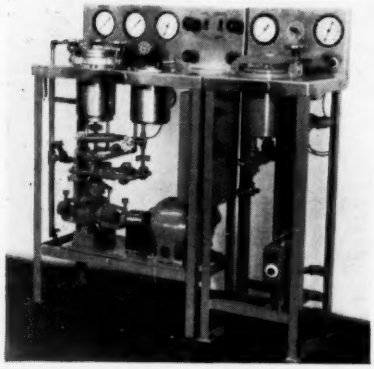
J, L, Q and X-3.

Resistance of the specimen, or load, is absorbed by the deflection of an elastic spool, which is converted to a voltage and measured by a potentiometer with recording chart. On the chart, extension of the specimen is shown vertically and load horizontally. Inasmuch as chart speed and clamp speed are both time functions, the chart becomes a stress-strain diagram directly, with either variable (load or extension) magnified or condensed as desired.

As the name of system implies, inertia is practically eliminated from the mechanism. The improved sensitivity reflects the behavior of the specimen in more minute detail. Also, the flexibility of drive and recorder rates and wide range of chart speeds available permit new studies of progressive test stages.

In operation, the specimen is inserted in the tester clamps in the usual manner, and the chart pointer adjusted to zero for the existing tare load. The driving mechanism is then set in motion, extending the specimen by moving the lower clamp downward at a uniform predetermined rate of speed. At the same time, by synchronized automatic action, the chart paper commences its downward travel at its predetermined speed. As the specimen is extended, the elastic spool in the head weighs the load by its deflection. This deflection is reflected in the horizontal scale, graduated from 0 to 100. It is claimed that the maximum deflection of the elastic member under maximum lb load plus tare, is .0015". The accuracy of the system is said to be ¼ of one per cent of the span, or better.

As to capacities, conversions are available from 2 to 10 lbs to 400-to-2,000 lbs. The change from one capacity to another is readily accomplished by changing the elastic member rather than the entire head.



Smith-Drum Laboratory Single Package Dyeing Machine in conjunction with the Smith-Drum Single Package Air Pressure Extractor

SMITH-DRUM SINGLE PACKAGE LABORATORY DYEING MACHINE

(Smith-Drum)

This machine is complete with stainless steel pressure dye kier, stainless steel open-top-type expansion tank and stainless steel pump, driven by a 1 HP ac motor. The water-cooled pump reportedly will deliver 5 to 6 gallons per minute and be suitable to operate at temperatures up to 300°F, under total working pressures of 100 psi.

Specifications call for the dye kier to be fitted with a stainless steel dye spindle to accommodate one package wound on the standard ⅝" and/or 1⅝" diameter dye tubes and to be complete with top and bottom plates for dyeing spring-wound packages. The machine is provided with equipment for automatically reversing the flow of dye liquor through the package. There will be a jacket around the dye kier for heating and cooling to provide for high temperature as well as standard dyeing operations. The machine will be complete with an attached stainless steel control panel with gauges which will indicate pump pressures on outside-in and inside-out lines along with an indicating dial type thermometer. Valves for controlling steam and cooling water; also, start-stop and manual reverse control selector switches will be mounted on this panel. With the machine Smith-Drum will supply a safety valve and bypass for direct control of back pressure, at the will of the machine operator.

SMITH-DRUM SINGLE PACKAGE COMBINATION AIR PRESSURE EXTRACTOR-DRYER

(Smith-Drum)

This machine, which may be used individually or in conjunction with the Smith-Drum Single Package Laboratory Dyeing Machine, is complete with a covered heavy-gauge steel tank treated with a corrosive-resistant surface inside and out, and a 1500-watt, 115-volt electric compressed air heater. The heater is said to be capable of heating 10 cubic feet of clean dry air per minute at 20 psi from 70°F to 240°F. It also has a suitable thermostatic controller attached.

The machine is equipped with a standard ⅝" and/or 1⅝" diameter dye stem and is complete with top and bottom plates for extracting and drying spring wound packages. The air piping arrangement consists of a ¾" I P S inlet for connection to a compressed air supply system. Specifications call for the air pressure, under normal operating conditions, should not exceed 5 psi and the air to flow from the outside-in direction. This machine is furnished with a stainless steel table, having as an integral part, a control panel, which includes a pressure gauge, a current input controller, a thermometer, a thermostatic controller, a manual stop and start switch and a bull's eye to indicate when the heater is in operation.

TUBE-TEX TENSIONLESS CALENDER

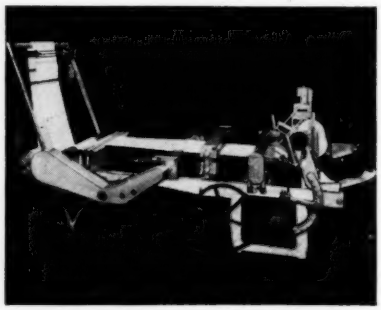
(Tube-Tex)

In the processing of circular knit synthetics or blended jersey fabrics to retain lofty and full hand and appearance, the Tube-Tex Tensionless Calendar is filling the need for steaming and spreading without lengthwise tension and pressure from calender or finish rolls.

The machine has for several years been used for controlling the relaxation shrinkage of cotton and wool fabrics. With minor adjustment the same machine can be adapted to the synthetic and blended materials, it is reported.

The machine incorporates a patented, internally driven propeller spreader, which conveys the fabric in a relaxed manner through the steaming area. In this way cloth width is fixed and cloth length is shrunk or reduced to the relaxation needs.

The machine is handled by one operator and reportedly can handle blends such as Orlon-wool, nylon-wool, and straight synthetic fabrics at speeds up to 30 or more yards per minute.



Tube-Tex Tensionless Calender

BLAK-RAY* ULTRA-VIOLET LAMPS

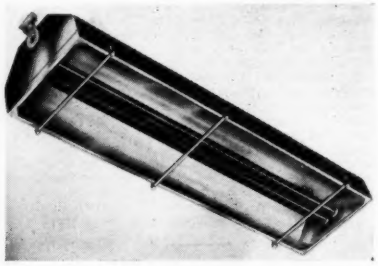
(Ultra-Violet)

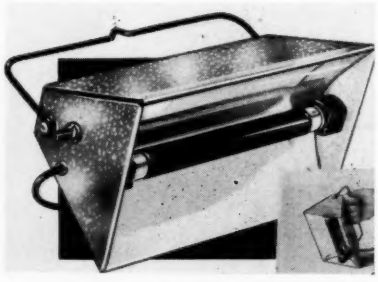
The Company's line of Blak-Ray high-intensity long-wave ultra-violet lamps appear to be particularly adaptable to the textile industry.

When directed at certain substances the invisible "black-light" rays cause fluorescence, whereby these substances radiate a color different from their own. Thus variations that are invisible, or nearly so, in ordinary white-light, stand out with clarity when exposed to the Blak-Ray. The lamps are useful for 1) observing, analyzing and comparing materials, weaves, dye lots, 2) inspecting for flaws and variations, 3) "invisible" marking during manufacture, 4) locating oil spots on fabrics and tracing to their origin, and 5) displaying and merchandising manufactured items.

It is pointed out that Blak-Ray lamps are Underwriters' Laboratories Approved and are equipped with a self-filtering "black-light-blue" tube, which allows the long-wave ultra-violet rays (3660 angstrom units) to pass through but filters out the undesirable rays in the visible portion of the spectrum. No additional filters are required and the cool-operating tubes will last for 2000 to 3000 hours, it is claimed. Recommended for use at low light-levels, by the manufacturer, they require as great a degree of darkness as lamps using separate filters.

Available in 4, 8, 15, 30, 40 and 80 watt sizes, the Blak-Ray fixture may be rested on a flat surface, mounted flush to wall or ceiling, or hung from brackets. The 4 and 8 watt sizes have a special trunnion type bail that allows them to be tilted to any position within a 180 degree plane of the mounting surface. These models may also be used as portable inspection lights, weighing 1¾ lbs with an over-all dimension of 3¼"x4"x6½".





Blak-Ray Ultra-Violet Lamps

Top—Model B-50-H
Center—Model XX-40-S (80-Watt)
Bottom—Model X-4 (4-Watt)

See pages 809-810 for manufacturer's addresses

HIGHLIGHTS OF THE PAST YEAR

P J WOOD

Technical Director
Royce Chemical Company

PREPARATION AND DYEING

AN AUSTRALIAN patent is described in British Patent 676,781 by R L Frederick of Melbourne, in which the jigger is supplied with a pair of slotted idler rollers in addition to the usual four idler rollers. These are situated between the upper and lower pair of idlers and are connected with a suction pump, which forces the dye liquor through the goods during the dyeing operation. It appears that this would be useful in the preparation (desizing, scouring, etc) and dyeing of tightly woven and heavy fabrics and its use should result in better penetration of the treating liquors.

A new method of securing more uniform tension in jig dyeing is revealed in a patent issued to the Celanese Corporation of America for fluid brakes operating on the brake drums. These are actuated by a "feeler" roller over which the cloth passes that varies the amount of braking according to the tension of the cloth.

In previous issues of "Highlights", mention has been made of interest in ultrasonic vibrations as applied to dyeing processes. In British Patent 683,105, the patentees, the British Thomson-Houston Co, describe an invention which proposes to make use of vibration of the cloth itself in the dyebath at a low sonic frequency, mentioning frequencies of 25 to 1000 cycles per second. It is claimed that, in dyeing a heavy duck cloth with Ponsol Blue GD, a 75% improvement in penetration is possible.

A Southern textile machine manufacturer has built two types of piece dyeing machines for tricot, marquisettes and similar delicate fabrics, using the principle of the package yarn dyeing machine. The goods are rolled onto a perforated core, placed horizontally in the tank of the machine, where the end of the cylinder makes tight contact with the pipe from the circulatory system, through which the preparing and washing and dyeing liquors are pumped through the goods. In the case of the low pressure type the liquor is circulated in one direction only. In the closed machines which permit pressure dyeing, with temperatures up to 240°F, the circulation takes place in both directions. A special arrangement on the pressure type makes it possible to withdraw a sample and make the necessary dye additions without stopping the machine and without losing pressure. This machine seems to offer the possibility of dyeing the types of goods mentioned without distortion, which is a common trouble, and it also should eliminate rolling of the edges, which is a problem when dyeing wide tricot goods by other methods.

AUXILIARY MACHINERY IN WET PROCESSING

Suction extractors for goods in the open width have been known for a long time. It has remained for a Swedish inventor to introduce a new idea in the removal of water from textiles in rope form. Essentially it consists of a conventional bleachery rope squeezer in which the lower grooved roller is perforated and connected with a vacuum line. The upper roller merely applies very light pressure sufficient to hold the rope of fabric against the perforated grooved roller.

In this connection, Mellor, Mann and Mulhall, three research workers at the British Celanese Corporation, have discovered that an increase in temperature of the fabric when passing over the suction extractor results in removal of more water.

An English textile machine manufacturer is now manufacturing a scutcher which should be applicable to lighter fabrics, including the sheerer synthetics. The conventional type of scutcher has too drastic an action on the fabric to be used for delicate cloths. This new type operates without employment of the beater, but as far as opening the cloth is concerned it is said to be fully as effective as the old type.

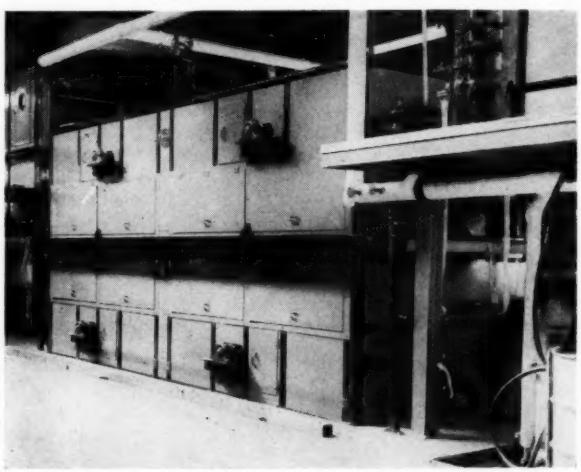


Figure 1
A view of the Vapojet Dryer manufactured by James Hunter Machine Company, North Adams, Massachusetts.

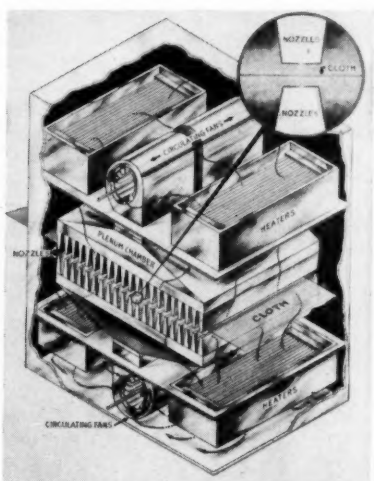


Figure 2
Interior construction of the Vapojet Dryer.

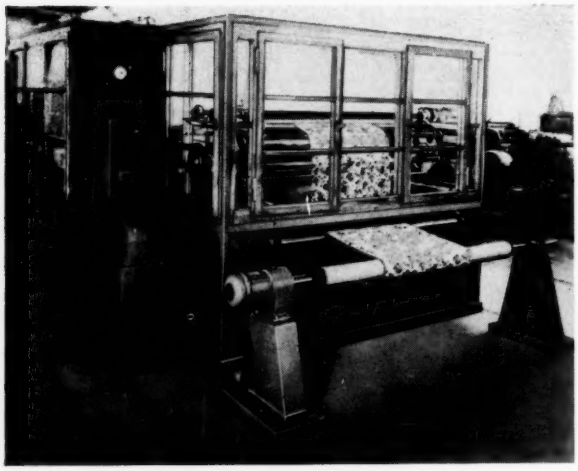


Figure 3
The Hobbs "Alquist" Winder as used with textile drying machine (behind winder). Hobbs Mfg Co, 26 Salisbury St, Worcester 5, Massachusetts.

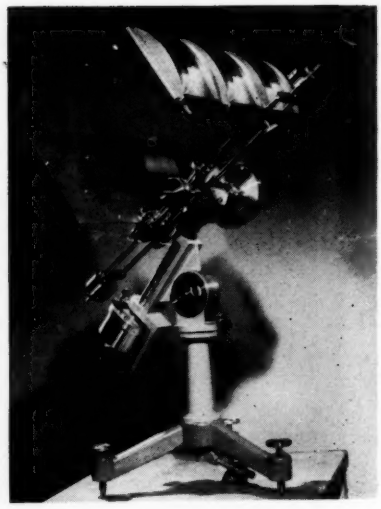


Figure 4
Apparatus for making actual sun tests.

TEXTILE PRINTING

The Norwegians have introduced a printing machine that occupies little space, is run by a single operator, and uses stencils. Evidently a screen print machine. it is said to be cheap and reportedly will print 1200 yards an hour.

An automatic screen printing machine is described in U S Pat 2,039,909. A later patent, issued to the same inventor in England, has many features that do not appear in the first. Later patents have been taken out in England varying somewhat the original design. Judging by some of the essential points mentioned, it appears that the main objective of the machine is high-speed operation.

DRYING

Currently, there is at least one superheated steam dryer in operation in this country. (See Figures 1 and 2). A European invention, it is being made by an American textile machine manufacturer under license from the original patentee, a talented Swiss inventor. The unit is now being manufactured in three forms: the clip tenter dryer, the tensionless roller dryer and the pull through type. Advantages claimed by the manufacturer include: economy of floor space and steam consumption, higher drying speed, better drying of selvedges, better handle imparted to fabrics and less damage to fibers from dry heat (due to a very small percentage of moisture carried out of the dryer by the cloth). The manufacturer points out that with this dryer, a curing oven and a cooling unit, it is possible to combine the operations of drying and finishing to the end that considerable economy is effected.

FINISHING

Application has been filed by an English machinery manufacturer for a dual purpose tenter clip, which can be speedily converted readily from a clip to a pin type. It is said that the change can be made even while the tenter is running.

A device for winding up goods without tension at the back of any textile finishing machine is now being made in this country under license from the German manufacturers, who claim to have made many hundreds of installations in all parts of Europe, on all kinds of materials, metallic foils, wire, textile fibers and fabrics. This should be ideal for finishing synthetic fiber crepes where minimum tension is required. The drive of the winder is independent of the drive of the machine and is accomplished by means of a constant torque motor of very low horsepower, so that variation of speed of the tenter will not affect the tension of the winder, i e, the roll of goods has the same uniform tension from end to end. (See Figure 3).

INSTRUMENTATION

In 1951 the American Cyanamid Co and E I Stearns, Jr secured U S Pat 2,540,797 covering a method of determining the integrated tristimulus values of certain dyestuffs. The advantage being that reproduction of a given dyed color with a mixture of any of these dyestuffs may be more easily carried out using these values than is possible using mathematical calculation. Attention was recalled to this patent by the announcement that British Patent 688,894 had recently been issued for this same method. For years attempts have been made to devise some system that would simplify the dyer's work, which is becoming more complex by the day, due to the introduction of new fibers with the most diverse properties and new dyestuffs with which to dye them. This may be a step in that direction.

Drs Gasser and Zukriegel of the Vereinigte Färbereien of Vienna have invented an apparatus, which, they claim, can make actual sun tests to determine the fastness to sunlight of dyed fabrics in much shorter time than is otherwise possible. This is done by condensing the sunlight by means of a system of specially constructed lenses to give an exposure to light 25 times the strength of natural sunlight. The exposure is made under the same conditions for every hour of exposure, i e, the lenses are moved by clockwork so that the sun's rays strike the samples at the same angle at all times. (See Fig 4). Along with the textile samples to be tested, cuttings of standard dyed samples of known fastness are exposed for comparison. When desired, the unknown and known samples can be so exposed that a circle of light of the exact same intensity is cast on the two samples, a semicircle of light falling on each simultaneously. This invention is covered by Austrian Patent 170,014; German Patent 865,074, and British Patent 691,239. Application for an American patent has been made.

MORE CAPACITY FOR TERYLENE PRODUCTION

Imperial Chemical Industries, which has been engaged in building a factory at Wilton, Yorkshire, England for the production of 11 million pounds Terylene fiber a year, has decided to increase the size of the plant to produce twice that amount. First production was originally expected in 1955.

THE DYEING AND PROCESSING OF SYNTHETIC FIBERS*

RALPH A TRAVIS

Summit Research Laboratories
Pepperell Manufacturing Co, Biddeford, Maine

INTRODUCTION

WE are living in an era of synthetic fibers, but as yet we haven't scratched the surface.

Today, the most recent publication of "American Handbook of Synthetic Textiles" *(1)* contains practically all the knowledge and information that was known at the time of publication about the newer synthetic fibers. But I predict that in twenty years hence, a ten foot bookshelf will be required to hold all the volumes which will have been published relative to man-made fibers.

Seventy-five to eighty years ago the textile colorist depended almost entirely on the natural dyewoods for his colors. There were only a few synthetic dyestuffs at his disposal. It was in the year 1856, while W H Perkin was endeavoring to prepare quinine by oxidation, that he obtained instead a red powder. The experiment, on being repeated with aniline, resulted in the production of a black substance, which on boiling with alcohol gave a violet-colored compound Mauve or Mauveine—the first synthetic dyestuff.

Just as synthetic dyestuffs came into being, so came the synthetic fibers. The first, which were called artificial silk, made their appearance at the turn of the century. Then came nylon in 1938, and although it is at the present time quite common, the DuPont Company spent ten years and $27,000,000 before the first pair of nylon stockings was produced.

The recent spectacular developments in the newer synthetic fibers go back a little more than five years when Dacron, Orlon, Dynel and Acrilan appeared. It is these fibers, their properties, dyeing methods, etc about which this paper is concerned.

DACRON

BACKGROUND———"Dacron" is the Du Pont Company's trade name for its polyester fiber synthesized from ethylene glycol and terephthalic acid. The groundwork for the development of this polyester fiber was laid by the late W H Carothers, Du Pont chemist, in his work with macromolecules. Dr Carothers elected to devote the major portion of his efforts to polyamides, a course which resulted in the development of nylon. British research chemists, after studying the published works of Dr Carothers, decided to examine

R A Travis

the possibilities of polyesters and their work resulted in the English invention of "Terylene."

In 1946 the Du Pont Company bought the United States rights to this polyester fiber. Du Pont named it Fiber V, later changed its name to Amilar and finally decided on the name Dacron, by which it is now known and merchandised.

CHARACTERISTICS———Dacron has good resistance to chemical degradation. It is not affected by bleaches and common solvents and will withstand strong mineral acid at room temperatures, although it decomposes in strong mineral acid at the boil. It is not as resistant to strong alkali as it is to strong mineral acid, having only fair resistance to strong alkali at room temperatures. At the boil it completely dissolves.

Dacron has remarkable resistance to heat, with a melting point at 460° F. High temperatures cause little discoloration nor do they impair the fiber appreciably. It will burn slowly but will not flash burn. Dacron dries quickly, having a moisture regain of only .4 per cent at 65% RH and 70° F. It is nontoxic, and even when taken internally, produces no poisonous or harmful effects.

Dacron sheds water like a duck, and whether wet or rumpled, keeps its crease. It does have an undesirable tendency to glaze when ironed at normal pressing temperatures.

DYEING———A few years ago it might have been said "there is no class of dye that will color Dacron. This fiber is so inert and has such a compact structure that it may be considered undyeable." In the intervening years, the picture has slowly changed. Experiments with different dyestuffs and dyeing methods have pointed out several different ways of dyeing Dacron. We have also learned how and why these dyes and dyeing methods produce satisfactory results.

It was known at the outset that Dacron was chemically similar to acetate rayon. Ester groups constitute 41% of the weight of acetate and it is now known that Dacron contains 46% of the same group. This chemical similarity has made Dacron receptive to the acetate class of dyestuffs in an aqueous dispersion. I would like to explain what occurs when a fiber is dyed with a dispersed dyestuff. In the dispersed dyebath the dye breaks up into very small particles (about .0001" in diameter). These particles are far too small to be seen. Each contains about a billion dye molecules. In the dyeing process the dye molecules apparently break off one at a time from the particles of dye, are subsequently carried through the water and finally reach the surface of the fiber. These single dye molecules then enter the fiber by dissolving in it and diffusing through it. Although acetate dyes can be employed for coloring Dacron, the absorption rate of dispersed acetate dyes on Dacron is much less than the absorption rate of the same dye on acetate rayon or nylon. Fortunately, the absorption of dyes by Dacron is greatly improved by the use of so-called carriers. A carrier is any substance which, when added to a dyebath, causes a marked increase in the color value obtained in the final dyeing. A great many chemical carriers have been tested and found to be of some value, but the ones being used in commercial scale dyeing are benzoic and salicylic acids, ortho or paraphenylphenol, phenol and monochlorobenzene. It might be well to mention that these carriers are quite expensive. The one I prefer is sodium ortho-phenylphenate, as the solubility of this chemical in water is excellent.

The development of high-temperature dyeing techniques for coloring Dacron stock, top, yarn and piece goods has proven advantageous; it cuts the cost of dyes and chemicals and the color fastness properties are much improved compared with dyeings made at the boil. Dacron fibers in various forms are dyed in pressurized machines at pressures varying from 15 to 50 lbs and at temperatures of 250 to 270° F.

Pressurized machines for the high-temperature dyeing of synthetic fibers in stock, top and yarn form are being fab-

*Based on a paper presented before the Maine Section of the American Chemical Society on April 11, 1953.

ricated by several machine companies. A high-pressure elevated temperature dyeing machine (the Barotor) for dyeing Dacron and other synthetic fibers in piece goods form has been invented by P M Cole of Du Pont Co, and I understand that this machine is now being manufactured on a commercial basis and will soon be offered to mills desiring it.

ORLON

GENERAL CHARACTERISTICS——— "Orlon", another synthetic fiber produced by the Du Pont Company is one of the so-called acrylic fibers; this one came into being in 1941 with the discovery of suitable organic solvents for preparing solutions of polyacrylonitrile. Orlon acrylic fiber is an addition polymer made by polymerizing acrylonitrile. It is made from a dimethyl formamide solution of polyacrylonitrile by the so-called "dry spinning" method. Orlon is available as continuous filament (Type 81) and as staple fiber (Type 41). A new staple fiber, recently brought out and designated as Type 42, is said to possess decided improvements in many respects over Type 41.

The shrinkage is more pronounced in Type 42 than in Type 41, e g, in stock dyeing Type-41 Orlon staple fiber, the shrinkage is 12% to 14% while for Type 42 it is 20% or more. Great care must be exercised in stock dyeing Orlon 42 in a regular pressure machine or excessive shrinkage will occur with poor dye penetration.

Orlon 42 has less loft than Type 41, but dyes much better at 212° F. Brighter shades are secured and acid and acetate colors applied to it remain faster to light.

Orlon acrylic fiber is resistant to sunlight and dampness, and can be made to look wooly, but is much more difficult to dye than nylon. Orlon has a light cream color and good strength both wet and dry. It is also very resistant to abrasion. Orlon, like Dacron, has excellent resistance to mineral acids and common solvents and fair to good resistance to weak alkalis. When skeins of Orlon are boiled for thirty minutes they will shrink not more than 2 to 4 per cent and further boiling for one hour or more shows no further shrinkage.

Orlon will stand ironing temperatures up to 320° F satisfactorily; however, after prolonged heating above 250° F a slight yellowing of the fiber will occur. Orlon is resistant to degradation for both long and short exposure periods up to 300° F. At temperatures above 300° F short exposures are permissible, i e, for heat treatment in certain finishing and dyeing processes. Orlon, like Dacron, Dynel, Acrilan and many other synthetic fibers, is mothproof and mildewproof. Its flammability is approximately the same as for cotton, acetate and viscose rayon.

DYEING———Orlon acrylic fiber can be dyed with acetate, basic, direct and vat dyes, in light to medium shades but the most suitable at the present time are acid dyes, which are applied by the copper technique method. This method is quite similar to that used for dyeing Dynel with the exception that a milder reducing agent is used. The copper sulfate and the reducing agent (usually hydroxylammonium sulfate) react in the bath to produce copper in the cuprous valence state. Under these conditions Orlon, which normally shows no affinity for acid dyes, can be dyed a full shade range with quite satisfactory fastness properties. The copper dyeing method is unique among dyeing procedures in that the cuprous ion is absorbed by a fiber, and, once on the fiber, it creates affinity for dye. In dyeing by this method the cuprous ion is readily and rapidly absorbed by the Orlon, after which the dye molecule follows the cuprous ion into the fiber. Although it has been well established that cuprous copper is readily absorbed by Orlon, the exact nature of the chemical attraction between copper and Orlon is not clearly understood.

DYNEL

CHARACTERISTICS ——— "Dynel", another of the newer synthetic fibers, costs less than some of the other polyester and acrylic fibers. It is produced in staple form by Carbide and Carbon Chemicals Company, a division of Union Carbide and Carbon Corporation, and is made from a resin having 60% vinyl chloride and 40% acrylonitrile in the copolymer.

The natural color of the fiber is a light cream, but this varies with the denier or size of the fiber, the higher denier or coarser fibers having more color. The more common bleaching agents, such as sodium hypochlorite and hydrogen peroxide, have little effect on Dynel, but with an acid solution of sodium chlorite at a boiling temperature a slightly off-white can be obtained. Exposure to natural sunlight also has a mild bleaching action on Dynel.

Although Dynel has many desirable properties, it has one or two objectionable ones. Like Dacron, Orlon and Acrilan, Dynel is a hydrophobic (water repelling) fiber. This makes it difficult to apply dyes and chemicals from an aqueous solution. Dynel is a thermoplastic, heat-sensitive fiber, which will withstand drying temperatures up to 240° F but actually melt and fuse above that point. This heat-sensitive property has caused considerable difficulty in evaluating the lightfastness of a dyestuff when exposed in the Atlas Fade-Ometer. The heat generated in a Fade-Ometer is absorbed much more readily by Dynel than by other fibers and this actually changes the shade of the Dynel fiber, causing it to turn brownish and thereby affecting the dyed color shade being exposed. There are dyestuffs that will break down with 20 hours exposure in the Fade-Ometer, yet these same colors will stand a month's exposure under glass to sunlight. From these facts one can readily understand that the Fade-Ometer cannot be taken as a criterion to evaluate the sunlight fastness of all dyestuffs.

On the positive side of the ledger, Dynel staple fiber is highly resilient and contributes unusual and permanent loft to fabric. It exhibits good strength, both wet and dry, and is inert to the deleterious action of most chemicals and solvents, acids and alkalies having little or no effect. Dynel will not mildew nor is it edible to moth larvae. A test was recently run in which caged clothes moths and carpet beetle larvae were kept for four months with no food source other than Dynel. The larvae starved to death rather than eat the Dynel fabric. Another outstanding property of Dynel is its fire resistance. Although the fiber will burn when in contact with an open flame, it is self-extinguishing when the flame is removed. It was because of this property that all draperies and bed spreads of the new fireproof liner United States were made of Dynel. Still another outstanding characteristic of Dynel is its warmth. Some authorities make the claim that it actually has more warmth than wool, making it an excellent fiber for blankets.

DYEING———The most suitable dyestuffs for coloring Dynel are acetate, acid, basic and, in a few cases, vat. By far the most important are the acetate colors. Dynel has a natural affinity for this dispersed type dyestuff and even dark shades may be obtained with selected acetate dyes. The dyestuff is dispersed with a small amount of any good agent (of which there are many available on the market) after which it is added to a neutral dyebath. After raising the temperature to a boil or near a boil, it is necessary to boil from one to one and one-half hours, rinse off clean, give a light soaping at a 120° F when necessary, rinse again, extract and dry. The method of application for this class of dyestuff is quite simple, but I would give you a word of warning that it is not quite as simple as it sounds, selectivity being the keynote to success with this method. Utmost care must be exercised in the proper selection of each dyestuff to be used. Each color must be tested by trial and error to ascertain which is the most suitable. In other words, one must mix brains with dyestuff.

A more recent method of dyeing Dynel with acetate dyestuffs is that of incorporating the use of phenyl methyl carbinol as a carrier in the dyebath, thereby permit-

ting the use of a dyeing temperature of 180° F with results equal to those where this carrier is not used at a boiling temperature. Another advantage in the use of this carrier over other carriers is the improvement in light fastness. The amount to use will be governed by the particular dyestuff employed and will range anywhere from 5 to 20 cc/liter. The only objection to phenyl methyl carbinol at the present time is its high cost. This may prevent its use on a large scale.

Dynel may also be dyed with acid dyes or combinations of acid dyes and acetate dyes. Pastel shades may be obtained with acid colors merely by using sulfuric acid as a dyeing assistant. To obtain dark shades we must resort to a cuprous-ion method, similar to the one described in the dyeing of Orlon. A stronger reducing agent is permissible in this case, zinc formaldehyde-sulfoxylate replacing the hydroxylammonium sulfate. This method is applicable to both acid dyes and mixtures of acid and acetate dyes. Copper in its cuprous-ion state is specific to acrylonitrile-base fibers, and forms a bond between certain nitrile groups, of which the fiber is composed, and the dyestuff molecule. Synthetic fibers having the highest acrylonitrile content have greater receptivity for dyestuffs fixed by the cuprous-ion technique of dyeing.

I would like to mention that when Dynel is boiled in water and cooled it becomes delustered. To overcome this it is only necessary to dry the fabric at 240° F or boil the material in a 6% solution of sodium sulfate or sodium chloride when the luster will be restored.

FIBER AS———Fiber AS, a more recent fiber produced by Carbide and Carbon Chemicals Company, can be dyed in an acidulated dyebath with selected acid dyestuffs. This fiber also possesses static inhibiting properties.

ACRILAN

CHARACTERISTICS ——— "Acrilan" is another acrylic fiber reportedly modified with small amounts of vinyl acetate and another vinyl compound possibly containing a pyridine substituent. It is a product of Chemstrand Corporation. I understand that they are now producing a satisfactory fiber and have increased considerably the ease of dyeability of the new material being produced.

Acrilan was originally light tan in color, but recently has been produced in an off-white fiber.

Acrilan is physically similar to wool. It has good bulking power, warmth, stability, quick recovery from wrinkling, and good wet and dry strength. Acrilan retains a permanent crimp through processing which makes it an ideal fiber for blankets. Like other acrylic fibers it is not attacked by moth larvae nor will it mildew. Acrilan fabrics should be dried at approximately 240° F. The fiber, unlike Dynel, will withstand a drying temperature of 300° F, but this higher temperature has a tendency to yellow the fiber somewhat.

Acrilan is not affected by acids at ordinary room temperatures, with the exception of concentrated sulfuric acid. It will withstand weak alkalies, but a 1% solution of sodium hydroxide at the boil for two hours will reduce its strength approximately 50%. Like other acrylic fibers, it will stand common organic solvents.

DYEING———Acrilan has better dyeability than any of the other three fibers which we have discussed. Since it contains basic nitrogen groups, it can be dyed directly with acid dyes. It can also be dyed quite well with acetate, premetallized dyestuffs, chrome vat and the leuco vat esters, which are the sulfuric acid esters of the reduced vat dyes.

The acid dyestuffs are applied to Acrilan with 1% to 2% of sulfuric acid as a dyeing assistant, although this can vary somewhat with the dyestuffs or type of fabric. The acetate dyes can be applied right in the scouring bath. The goods are first scoured with a nonionic detergent, using ½ to 1% on the weight of the goods at 160° F. Instead of washing off at this point, one should add the dispersed acetate dye and bring the bath to a boil. Boiling should be carried on for 1 to 2 hours depending on the shade. When the shade has been obtained, rinse slowly, taking care not to cool the dyebath too rapidly. Take out or give the dyed goods a scour if necessary.

Chrome, vat and the leuco vat esters can be applied by practically the same methods as would be used on natural fibers, modifying the the procedure somewhat when necessary.

It is customary to preset Acrilan fabrics in the open width at a boiling temperature and then scour with a nonionic detergent at 160° F. This is done to prevent wrinkles from being formed, and also to eliminate abrasion or so-called rope marks. At Pepperell we have found a method of dyeing Acrilan fabrics so that this presetting technique can be eliminated. This method is so new that we have not yet had time to develop its full possibilities, but it looks to be very promising, and we may have much to say about it at some later date.

REFERENCE

(1) Textile Book Publishers, Inc, New York. Much of the information concerning the chemical and physical properties of synthetic fibers was obtained from this source.

ABSTRACTS

Sodium Chlorite in the Textile Industry

T K Merz, *Canadian Textile J* 70, 52-4, 61, August 28, 1953.

The author devotes most of the article to a discussion of the effect of sodium chlorite when used as an oxidizing agent in the development of vat dyeings. He states that several vat dyes are partly or completely destroyed by chlorite; a number of others come out weaker in tinctorial strength and often duller in shade. On the other hand, other vat dyes give brighter shades, and still others are unaffected. A table of Indanthrene dyes is appended, in which the effect of sodium chlorite on the shade and depth of each is listed.

It is well known that a number of vat dyes are "fiber tenderers," when fabrics containing colored yarns dyed with these dyes are bleached with sodium hypochlorite in insufficiently alkaline liquor, particularly when the bleaching liquor is exposed to direct sunlight. Indanthrene Orange RRT and Rubine R are considered to be the most active "tenderers," but Indanthrene Yellows G and GF, Golden Yellow GK, Golden Orange G, and Scarlet R can also cause distinct damage. The maximum tendering is obtained when the bleaching liquor approaches the neutral point.

The writer recalls a case in which thousands of yards of a bleached fabric containing colored yarns were rendered useless. The portions dyed with Indanthrene Orange RRT showed up completely white after bleaching and washing. The orange-dyed parts of the cloth had been damaged to such an extent that they could no longer resist the strain of the treatment in the washing machine. In comparison with this, the blue and grey portions of the same cloth showed no tendering effects at all, although they had been exposed to the same bleaching and washing process.

The author points out that when sodium chlorite is used as the bleaching agent instead of sodium hypochlorite, these so-called "tendering" dyes have no detrimental effects on the fiber.—WHC.

The Structure and Chemical Properties of Dyes in Relation to Their Use

T Vickerstaff, *J Soc Dyers Colourists* 69, 279-82, August, 1953.

The constitutions of existing commercial dyes, which are all successfully applied to textile fibers, are so varied that at first sight it seems impossible to trace any detailed connection with dyeing. One feature which stands out clearly, however, is the importance of ionic charge. Since dyes are still applied almost exclusively from aqueous solution, solubility in water is an essential property. By far the most powerful solubilizing groups are those which ionize in water, and so most dyes contain one or more ionic groups. Thus the acid dyes usually contain sulfo or carboxyl radicals, the vat dyes ionized phenolic radicals, and basic dyes cationic quaternary ammonium radicals. The existence of an electrical charge on the dye molecule has a very great effect on dyeing behavior.

The relative importance of ionic charge and general structure differs according to the fiber being dyed. Almost any organic molecule which will ionize in aqueous solution can be adsorbed to some extent on wool under suitable conditions. Not so, however, with cellulose fibers, where the effect of charge is of a secondary order and the molecular architecture of the dye of paramount importance. In the cases of cellulose acetate and especially the newer synthetic fibers—Terylene and Orlon—electrical charge again becomes a primary consideration, but this time in the opposite sense, for it appears that few compounds which are ionized can be absorbed by these fibers at all.

Considering first the general structure of the dye molecule, this is most critical in cellulose dyeing. In order that a dye may have affinity for cellulose, the molecule must be capable of taking up a linear and planer configuration, and should contain hydrogen-bonding groups, preferably spaced some multiple of 10.3 A apart. It should contain a long chain of conjugated bonds, and the minimum number of solubilizing groups, preferably arranged along one side of the dye molecule.

In contrast to this, the effect of constitution in wool dyes is difficult to detect. If the molecular weight is increased without alteration of the number of solubilizing groups, the wet fastness is increased, but if then a further sulfonic acid group is introduced, the fastness is decreased.

The forces linking acid dyes to wool are, in order of importance, (i) ionic forces between the ionized groups of opposite charge in the dye and in the fiber, (ii) van der Waals forces between the hydrophobic parts of the dye and the fiber, varying with the area of the dye molecule or approximately as the molecular weight, and (iii) co-ordination forces or hydrogen bonds between specific groups in the dye and the fiber.

In the case of vat dyes on cellulose, it is again difficult to identify the structural features which contribute to the affinity, and it seems probable that van der Waals forces proportional to the molecular area are the most important.

There is a close correlation between neutral dyeing behavior on wool and degree of sulfonation, monosulfonated dyes having a greater affinity in neutral solution than polysulfonated dyes.

The nature of the electrical effect is clearly shown by the action of neutral salts in wool dyeing. In acid solution, addition of salt reduces the amount of dye take-up, as the inorganic anions displace dye anions from the fiber. In neutral solution, inorganic salts promote dyeing by screening the electrical charge on the fiber.

In the case of cellulose, the fibers are all negatively charged in neutral aqueous solution, and so repel dye anions. Electrolytes facilitates the approach of anions to the fiber surface by screening the electrical charge, and thus promote dyeing.—WHC.

• PATENT DIGEST •

RESIN FINISHES PRODUCING LINEN-LIKE EFFECTS G, 2, 01

PAUL WENGRAF

U S Pats 2,622,994-95 (Joseph Bancroft & Sons———Lippert, Hall ———Dec 23, 1952)

Both of these patents are based on the same principle———producing a subdued luster in the calendering (chasing, embossing, etc) processes. They differ only in detail.

The fabric is impregnated with an aqueous solution of thermosetting-resin-forming components or water-soluble precondensates, cooled, carefully dried, subjected to the aforementioned calendering operation (avoiding polymerization), and finally cured. As a consequence, the resin formation is not restricted to the fiber surface, but takes place in the interior parts as well. The effect is described as a "deep seated, relatively subdued luster or glow". At the same time the individuality and flexibility of the fibers is said to be substantially retained.

The required resins may be of any acid-catalizable type, such as ureas, thioureas, melamines, etc. The catalysts should have a delayed action, and the pH of the catalytic solutions must be limited between 6 and 8, developing the proper action at curing temperatures only. Preferred catalysts include "Catalyst AC", described as an "organic nitrogen chloride", and carbazide hydrochloride (carbohydrazide hydrochloride

$H_2N—NH—CO—NH.NH_2 . 2\,HCl$);

however, other potential acid catalysts may be used as well.

According to U S P 2,622,994, the drying process of the resin-solution-impregnated fabrics has to be carried out *to dampness,* preserving an excess of 10-15% over the natural combined moisture. In contrast, U S P 2,622 995 calls for drying at 200-350° F until the fabric is "devoid of free moisture". Thereafter, in both cases, the fabric has to be cooled down rapidly to room temperature to prevent any premature polymerization before or during calendering, and cured in an oven for 2 to 8 minutes at 250-350° F. Calendering temperatures should not exceed 175° C.

Example: (U S P 2,622,994): a spun rayon fabric is impregnated with a mixture of methylolurea and dimethylolurea-formaldehyde resins, Sapamine and Catalyst AC in ammoniacal solution, squeezed to a pickup of 80%, dried to an excess moisture content of 10%, cooled to 60° F, chase-calendered in a 5-bowl calender and finally cured for 2 minutes at 350° F.

Among the references cited for both patents by the Patent Office:

U S P 2,454,391 (Cranston Print Works/1948): printing with a paste containing resin components, hardening, calendering (or glazing) and rinsing to obtain a glazed pattern on nonlustrous ground. This patent is parallel to Brit P 597,435 [cf *Am Dyestuff Reptr 38,* 206 (1949).]

U S P 2,347,024 (Beer/1944): shrinkproofing and otherwise improving fabrics by a combined treatment with a thermosetting resin and "Zelane".

U S P 2,242,218 (Auer/1941): rendering fabrics resistant to laundering and crushing with urea-formaldehyde resins, using aromatic carboxylic acids (benzoic or phthalic) as catalysts.

U S P 2,121,005 (Raduner/1938): shrinkproofing textiles by first impregnating with resin components or precondensates, then tentering to fix the desired dimensions, and finally curing. This process can be used as well for permanent embossing effects and is described in a co-pending application.

Proceedings of the

American Association of Textile Chemists and Colorists

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Editor of Proceedings: Carl Z Draves, 30 Lahey St, New Hyde Park, N Y

DECEMBER 7, 1953

EMPLOYMENT REGISTER

This column is open for two insertions per year, per member, without charge. Blanks can be obtained from and filed with, the Secretary of the Association, Lowell Textile Institute, Lowell, Mass. It is understood that these will be open to inspection by prospective employers who can obtain further information from the Secretary.

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Education: textile chemistry and dyeing, college degree.

Experience: textile chemist and colorist, laboratory.

Age: 39; married; references; position as colorist and chemist in sales service laboratory desired; New England or New York preferred but not essential.

12-7, 12-21

CALENDAR

COUNCIL

1954—Jan 22, Apr 30, June 15, Sept 15, Nov 19.
1955—Jan 21, Apr 15, June 17

NATIONAL CONVENTIONS

Sept 15-18, 1954 (Atlanta Biltmore, Atlanta, Ga); Sept 21-23, 1955 (Chalfonte-Haddon Hall, Atlantic City, N J).

HUDSON-MOHAWK SECTION

Jan 22 (Albany); March 5; April 9, May 14 (Albany); June 18 (Outing).

MID-WEST SECTION

February 13 (Hotel Bismarck, Chicago, Ill).

NEW YORK SECTION

Jan 29, Feb 26 (Hotel Statler, N Y); April 23, May 21 (Swiss Chalet).

PACIFIC SOUTHWEST SECTION

Jan 29.

PIEDMONT SECTION

Jan 30 (Hotel Poinsette, Greenville, S C); Apr 10 (Hotel Roanoke, Roanoke, Va); June 11-12 (Outing, Mayview Manor, Blowing Rock, N C); Sept 11 (Hotel Barringer, Charlotte, N C).

PHILADELPHIA SECTION

Jan 15.

WESTERN NEW ENGLAND SECTION

Dec 11 (Rapp's Restaurant, Shelton, Conn).

Membership Applications

Nov 17, 1953

SENIOR

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Robert L Bernstein — Research chemist, Alrose Chemical Co, Cranston, R I. Sponsors: A Darby, G Hermann.

Edward D Frobenius—Supt, Stonehenge Processing Corp, Cedar Grove, N J. Sponsors: E H Staab, L C Roome.

Frederico Janstein — Manager, Produtos Quimicos Ciba S A, Sao Paulo, Brazil. Sponsors: C J Weidmann, S N Glarum.

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(Concluded on Page P864)

*AATCC Research Newsletter No. 7

NEWS IN GENERAL

The new Commercial Standard for Textile Flammability (CS 191-53) is being studied for possible modifications in the procedure for drycleaning the samples. The test as called for has been found to be highly impractical. In co-operation with the Committees on Flammability and Drycleaning Test Methods, AATCC research laboratories are investigating more economical procedures of test with a view to making recommendations to the proper administrative agencies of government.

In the absence of chairman Charles Dorn, who is recovering from recent surgery, the industry standing committee under this standard will be convened shortly with both George Buck of the National Cotton Council and Herman Hager of General Dyestuff Corporation in charge, to consider AATCC recommendations and action.

AT RESEARCH HEADQUARTERS

1. In conjunction with the December meeting of the Northern New England Section at Lowell Technological Institute the AATCC headquarters laboratories conducted an open house at which some of the newer testing procedures were demonstrated which were of special interest to those who previously had not viewed them.

Charts showing results of both wet and dry abrasion tests as well as accelerated laundering tests were on display. Flammability, dimensional change and accelerated gas tests also attracted considerable attention.

2. The report of the results obtained in the inter-laboratory tests made on 16 unshrunk and preshrunk cotton and rayon fabrics by 8 washing methods have been completed. It is now being studied by the Committee on Dimensional Change.

The report also includes comparisons of the repeated home washer and rotary washer launderings with commercial launderies. Analysis and interpretation of these results by the laboratory required thousands of mathematical calculations.

3. The accelerated shirt wear survey now in progress has the co-operation of the ASTM Abrasion Task Group on shirt wear.

The Accelerotor is not only evaluating the shirt fabric for dry abrasion resistance but also for alternate dry wear in laundering and "edge wear" of collar and cuffs. The results will eventually be compared with shirts actually worn by individuals.

COMMITTEE ACTIVITIES

Because the three-year term of office will have expired on January 1, 1954 for the chairmen of several research committees, new appointments have been made by the chairman of the Technical Committee On Research, Charles Dorn, with the approval of the Executive Committee On Research. A chairman cannot be reappointed except after one year from retirement. The new appointments and retiring chairman as announced at the TCR meeting on November 20th are as follows:

Committee on Dimensional Change -- Harry C Donaldson, Jr, Cluett Peabody & Co, takes over from John F Warner, D B Fuller & Company.

Committee On Wash Fastness -- James Fynn, J C Penney Laboratories, from Charles A Sylvester, E I du Pont de Nemours & Co, Inc.

Committee On Snag Resistance -- J Edward Smith, E I du Pont de Nemours & Co, Inc, from Cameron A Baker, U S Testing Co, Inc.

Committee On Permanent Finishes -- Ernest L Caswell, Ciba Co, Inc, from Alden D Nute, American Cyanamid Company.

Committee On Light Fastness -- Robert C Allison, Geigy Chem Corp, from Matthew J Babey, American Cyanamid Company.

Committee on Standard Depth of Shade -- Robert C Allison from Matthew J Babey, American Cyanamid Company.

Because of the pressure of his office as president of AATCC, J Robert Bonnar of General Dyestuff Corporation has relinquished his post as chairman of the Quartermaster Committee on Standard Dyeings to William A Holst, Jr, Allied Chemical and Dye Corporation.

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1953 Annual Convention
"Science Fiber" Group——

ACETATE BLENDS OF IMPROVED PERFORMANCE*

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Celanese Corporation of America

The problem of the balancing of physical characteristics in blends is discussed, and data are presented on acetate-viscose and acetate-viscose-nylon blends having optimum performance characteristics.

Different finishing techniques used on acetate blends to enhance further the performance characteristics are described. Commercially feasible techniques for improved color fastness on acetate-viscose and acetate-viscose-nylon blends are also presented.

The construction, dyeing procedures and performance characteristics of acetate-wool blends are described, and the effectiveness of acetate in producing fabrics having wool-like performance characteristics is pointed out.

INTRODUCTION

In recent years, scarcely any terms in the vocabulary of the textile technologist have been more often used, and perhaps misused, than those of *fiber blends* and *blended fabrics*. While even the most conservative textile manufacturers and consumers can no longer question the fact that the blending of different fibers may magnify the better qualities and minimize the individual deficiencies which all fibers possess, a major problem exists in that the fabric designer and the textile engineer still do not know which fibers should be used, how they can be blended, and in what proportion they should be blended, in order to obtain the best results. Another term that has become almost as popular as *blends*, and that is very frequently referred to in this connection, is *performance*, which, according to the dictionary, is defined as, "the execution of required functions." Unfortunately, when one tries to define the required functions of fabrics, or even attempts to measure them in terms of physical and chemical properties, a great number of unknown factors are found to exist. One cannot help but conclude that the blueprinting of blended fabrics having superior "all-around" performance is still an unsolved problem. Today, however, an engineering approach to the problem is possible on a limited basis, viz:

1) Define for the specific end uses the major functional requirements together with correlating test methods.

2) Using these test methods, determine the properties of a large number of fabrics which have gained continued commercial acceptance, as well as those which have exhibited deficiencies in certain defined performance characteristics.

3) Estimate, on the basis of these data, the minimum requirements for each individual property.

We have applied this approach to a few important commercial applications, such as fabrics for sport shirts, slacks, and lightweight suitings. The results, which will be presented in this paper, clearly indicate that the real problem in developing blended fabrics of satisfactory performance is the achievement of a proper balance of a large number of critical properties related to functional requirements. Over-all good performance for more people at lower prices is the desired aim rather than outstanding performance in some single property.

B S Sprague

The level of desired properties for the above-mentioned end uses having been established, the possibilities were studied as to how these requirements could be met by blends of acetate with other manufactured and natural fibers. In particular, blends of acetate and rayon and acetate-rayon-nylon were investigated with regard to physical performance characteristics and the possible improvement of the washability and durability of these blends by special dyeing and finishing techniques.

Recognizing the importance of wool blends in the field of suiting fabrics, we have also studied the potentialities of acetate in blends with wool and have compared them with other blends now being used for suiting fabrics.

FUNCTIONAL REQUIREMENTS OF COMMERCAL FABRICS

The requirements of apparel fabrics in end use may vary somewhat, even for one specific type of end item, depending on the environmental conditions under which they are worn. In addition, physiological and psychological factors as well as personal preferences and economic and social factors have some effect. However, for such applications as 1) washable sport shirts, 2) washable slack and outer wear fabrics, and 3) lightweight suitings, the listing of end-use requirements and related fabric properties given in Table I may adequately cover the functional requirements. The relative importance of the various factors and the level of properties required for adequate performance will be different for the sport-shirt fabrics and the slack and suiting fabrics. For instance, the resistance to laundering of suiting fabrics need not be as high as for shirting or slack fabrics, nor is it necessary that the wrinkle resistance and recovery of the latter two fabrics be as good as for a suiting fabric.

It is beyond the scope of this paper to discuss the test methods that may be suitable for evaluating the various characteristics. It is well known that for a number of performance characteristics either no adequate laboratory test methods are available, or suitable test methods are too costly to be employed on a routine basis. On the other hand, it was found that existing laboratory methods, if properly used and interpreted, do permit an intelligent evaluation of most of the functional requirements of the apparel fabrics. A number of selected test methods are indicated in Table I, and, in addition, a brief description of the test methods used to evaluate the fabrics discussed in this paper will be found in Appendix #1.

* Presented by B S Sprague in the Grand Ballroom of the Conrad Hilton Hotel in Chicago on Thursday afternoon, September 17, 1953.

TABLE I
END-USE REQUIREMENTS OF OUTER-WEAR FABRICS

A Aesthetic Appeal

Related Fabric Characteristics	*Applicable Test Methods*
1) Appearance	1) a) Subjective (visual) evaluation b) Physical (spectrometric, reflectency) tests
2) Retention of appearance	2) a) Subjective evaluation after actual wear and laundering tests b) Fastness tests
3) Hand and drape softness resilience touch flexibility drape	3) a) Subjective evaluation b) Lab tests, such as Compressional & tensile elastic behavior stress-strain-time relationship) Flexibility tests Friction tests Drapemeter tests

B Ease of Handling

4) Form stability in Tailoring Sponging Pressing Changing RH	4) a) Tailor test b) Lab tests such as shrinkage in Sponging Pressing Ironing Changing RH
5) Resistance to glazing and ironing	5) a) Lab glazing test b) Max safe ironing temp
6) Resistance to fraying & yarn slippage	6) a) Fraying test b) Yarn slippage test
7) Sewability	7) Sewability test including a) Yarn severance b) Needle-hole fusion c) Needle-hole retention d) Seam efficiency
8) Resistance to soilage and staining Ease of spot removing	8) a) Lab soiling and staining in combination with washing and drycleaning tests b) Service tests
9) Speed of drying	9) Drying test
10) Ease of ironing	10) Service tests

C Dimensional Stability

Related Fabric Characteristics	*Applicable Test Methods*
11) Resistance to shrinkage in Sponging Wet & drycleaning Laundering Pressing & ironing Changing RH	11) a) Lab wash and cleaning tests b) Test in home-laundering equipment c) Commercial laundering and cleaning d) Hoffman press shrinkage test e) RH movement test
12) Crease resistance and Recovery Crease retention	12) a) Crease-angle recovery test b) Laboratory wrinkle test c) Crease-retention test d) Service test
13) Resistance to and recovery from Stretching and compression	13) a) Tensile and compressional tests b) Wear tests

D Durability

14) Resistance to shining and crocking Resistance to Filling Resistance to snagging Wear resistance Tear strength Resistance to laundering	14) a) Tensile and tearing strength tests b)* Laboratory abrasion and wear test c)* Phys and chem test in comb with laundering tests d) Service tests

* Numerous tests are available, cannot be listed individually

E Comfort and Protection

15) Comfort Weight Touch Drapeability Warmth or coolness Static electricity	15) a) Weight 3) b) Lab tests as for hand & drape 15) b) Heat transmission 15) c) Air and water vapor 15) d) Adsorption 15) e) Heat of Absorption 9) Rate of drying 15) f) Wicking 15) g) Static tests
16) Water resistance	16) a) Static b) Dynamic absorption tests c) Rain penetration tests
17) Fire resistance	17) a) Flame-resistance test b) Rate-of-burning test c) Cigarette test

TABLE II
CONSTRUCTION DETAILS OF COMMERCIAL FABRICS

Fabric No.	*End Use*	*Fiber Content*	*Weave*	*Weight Oz/Yd²*	*Thread Count*	*Yarn Size*	*Crimp %*	*Finish*
1	slack	80/20 rayon/nylon	2/1 —/twill	8.85	102X52	14/1	7.9X3.5	resin
2	slack	75/25 rayon/nylon warp 100% rayon filling	2/1 —/twill	8.27	102X45	14/1	11.5X11.6	resin
4	slack	50/50 acetate/rayon	2/2 —/twill	8.50	104X47	14/1	8.0X11.6	resin
5	slack	50/50 acetate/rayon	2/2 —/twill	8.72	101X49	14/1	9.5X10.6	resin
6	trop suiting	100% wool	plain	6.69	54X47	24/2	9.0X15.0	plain
7	trop suiting	50/50 rayon/Dacron	plain	5.90	64X58	31/2	10.0X7.6	resin
8	trop suiting	55/45 Dacron/wool	plain	4.75	54X45	34/2	10.0X10.8	....
9	trop suiting	35/40/25 acetate/rayon/Dacron	plain	7.15	62X43	24/2X30/2	15.5X14.2	....
10	trop suiting	55/45 Orlon/wool	plain	5.36	49X40		8.2X11.0	....
11	trop suiting	acetate/rayon, end-&-end, pick-&-pick	plain		54X44	24/2X30/2		resin
12	suiting	80/20 rayon/wool	2/2 —/twill	9.5	68X56	20/2	6.1X6.0	resin
13	suiting	50/25/25 rayon/acetate/Orlon	2/2 —/twill	6.18	78X62	14/1	7.0X10.0	resin
14	suiting	100% wool	2/2 —/twill	7.95	70X68	24/2	8.5X15.6	plain
15	shirting	100% rayon	2/2 —/twill	5.71	103X50	20/1	4.9X5.7	resin
16	shirting	100% rayon	2/2 —/twill	6.20	108X53	21/1	8.8X7.5	resin
17	shirting	50/50 acet/rayon	2/2 —/twill	5.89	107X52	23/1	8.6X9.0	resin
18	shirting	100% Orlon	plain	4.39	40X37	14/1	5.0X10.3	plain
19	shirting	100% Acrilan	plain	3.92	40X41	14/1	2.2X8.8	plain

RANGE OF PERFORMANCE CHARACTERISTICS——In order to determine the level of performance characteristics exhibited by fabrics used for a number of similar end uses, commercial slack, suiting, and sport shirting fabrics have been evaluated. For most of these fabrics some indication as to practical performance has been given by continued consumer acceptance or complaints. However, the fabrics have not been systematically evaluated by adequate field tests. Since they were originally collected for a variety of purposes, they are not complete in many respects, but they will serve to show the wide range of properties existing in commercial fabrics. Data on construction, sewability, thermal behavior, dimensional stability, durability, and washfastness will be found in Tables II through VII. In addition, Table VIII shows the level of washfastness which was found by testing a number of commercially available slacks. No data related to the aesthetic appeal and to comfort and protective properties were included since proper quantitative methods for evaluating these characteristics are not available.

Inspection of Tables II to VII will show that the various fabrics exhibited a wide range of properties, although they are intended to be used for the same or similar purposes and obviously have found consumer acceptance with very few exceptions. The fact that some of these fabrics

TABLE III

SEWABILITY AND THERMAL PROPERTIES OF COMMERCIAL FABRICS

Fabric No.	Fiber Blend	Needle-Hole Fusion %	Resistance to Needle-Hole Retention	Thermal Behavior	
				Resistance to Glazing	Safe Ironing Temp °F
1	80/20 rayon/nylon	100	excellent	fair-good	428
7	50/50 rayon/Dacron	33	poor-fair	fair-good	392
8	55/45 Dacron/wool	50	poor-fair	...	...
10	55/45 Orlon/wool	0	excellent	good	446
12	80/20 rayon/wool	0	excellent	good	...
13	50/25/25 rayon/acetate/Orlon	0	excellent	good	410
14	100% wool	0	excellent	good	...
15	100% rayon	0	poor-fair	good	374 (color change)
18	100% Orlon	0	excellent	fair	356
19	100% Acrilan	0	fair	...	356

TABLE IV

DIMENSIONAL STABILITY OF COMMERCIAL FABRICS

Fabric No.	Fiber Content	Laundering at 160° F — Shrinkage — %		Steam Press Shrink—%		Crease Recovery Degrees		Wrinkle Performance
		Warp	Filling	Warp	Filling	Warp	Filling	
1	80/20 rayon/nylon	6.0	1.1	1.1	0.9	137	135	fair-good
3	75/25 rayon/nylon warp, 100% rayon filling	..	..	..	..	90	110	fair
5	50/50 acetate/rayon	..	..	..	..	129	142	fair
7	50/50 rayon/Dacron	..	..	1.5	1.5	137	131	fair-good
8	55/45 Dacron/wool	..	..	1.8	0.6	150	150	fair-good
10	55/45 Orlon/wool	1.3	0.5	3.1	2.9	148	152	good-excellent
12	80/20 rayon/wool	..	..	1.3	0.8	143	140	fair-good
13	50/25/25 rayon/acetate/Orlon	1.5	1.1	0.9	1.7	151	165	excellent
14	100% wool	..	..	1.8	1.8	157	145	good-excellent
15	100% rayon	7.5	8.0	1.2	1.2	68	81	poor
18	100% Orlon	0.5	0.0	1.3	0.4	140	140	good-excellent
19	100% Acrilan	2.8	1.1	1.4	1.2	144	147	excellent

TABLE V

FACTORS INFLUENCING THE WEAR RESISTANCE OF COMMERCIAL FABRICS

Fabric No.	Fiber Content	Flex Abrasion—Cycles				Effect of Mild Abrasion on Appearance			
		Dry		Wet		Pilling		Attrition	
		Warp	Filling	Warp	Filling	Dry	Wet	Dry	Wet
1	80/20 rayon/nylon	4930	277	1200	154	v sli	mod	none	v sli
2	75/25 rayon/nylon warp 100% rayon filling	8860	7500	1532	138	none	none	none	v sli
3	75/25 rayon/nylon warp 100% rayon filling	6610	3680	3030	62	none	sli	none	v sli
4	50/50 acetate/rayon	135	107	85	41	none	none	none	v sli
5	50/50 acetate/rayon	162	155	140	69	..	..	..	..
6	100% wool	580	429	239	180	..	..	..	..
7	50/50 rayon/Dacron	2090	3360	1920	1170	mod	mod	v sli	mod
8	55/45 Dacron/wool	3488	2190	1740	1230	mod	sli	v sli	mod
9	35/40/25 acetate/rayon/Dacron	3380	4980	762	359	mod	sli	v sli	mod
10	55/45 Orlon/wool	602	401	299	237	v sli	none	none	severe
11	acetate/rayon end-&-end, pick-&-pick	47	44	56	39	broke	none	extreme (broke)	severe
12	80/20 rayon/wool	155	157	150	130	none	none	none	none
13	50/25/25 rayon/acetate/Orlon	206	191	120	129	none	none	none	mod
14	100% wool	846	892	290	236	none	severe	sli	severe
15	100% rayon	127	..	86	49	none	none	none	v sli
16	100% rayon	56	..	57	27	..	..	..	..
17	50/50 acetate/rayon	105	37	75	21	..	..	..	..
18	100% Orlon	77	64	56	44	none	severe	none	extreme
19	100% Acrilan	79	67	67	54	extreme	extreme (broke)	severe	extreme (broke)

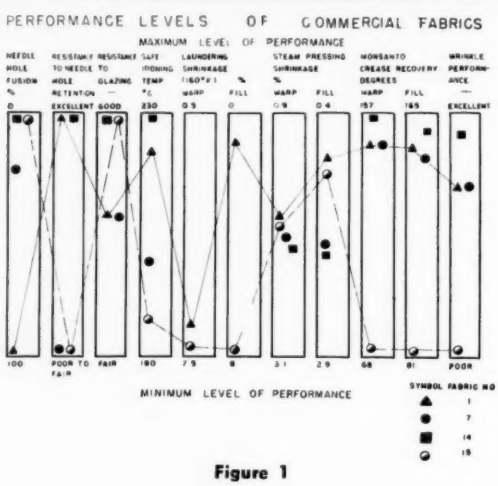
PERFORMANCE LEVELS OF COMMERCIAL FABRICS
MAXIMUM LEVEL OF PERFORMANCE
MINIMUM LEVEL OF PERFORMANCE
SYMBOL FABRIC NO

Figure 1

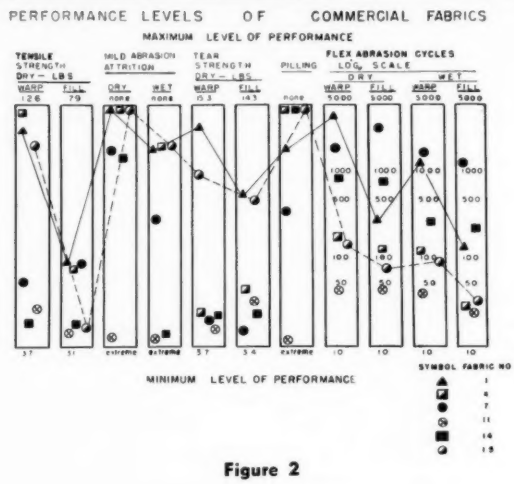
PERFORMANCE LEVELS OF COMMERCIAL FABRICS
MAXIMUM LEVEL OF PERFORMANCE
MINIMUM LEVEL OF PERFORMANCE
SYMBOL FABRIC NO

Figure 2

"got away with" relatively low values in one or more performance characteristics indicates that the minimum safe requirements must be extremely low, and that many of the fabrics are over-constructed or over-dimensioned with respect to one or several of the important functional requirements. The properties of the available fibers and the limitations given by the construction of yarns and fabrics may make it impossible to achieve an ideal balancing of the performance requirements, and, in addition, the versatility required for most of our major commercial fabrics calls for a relatively wide margin of safety in many of the fabric properties. However, Figures 1 and 2 clearly demonstrate that there is a need for a better balancing of the properties of a fabric. This is not only important for good over-all performance but is of equal importance for economic reasons.

The shortcomings of some of the fabrics as shown by actual use were reflected by the laboratory data. For example, the dimensional stability of the 100%-rayon shirting (#15 of Tables II to VII) is characterized by high laundering-shrinkage data and suggests inadequate resin treatment or the complete absence of a

TABLE VI
STRENGTH PROPERTIES OF COMMERCIAL FABRICS

Fabric No.	Fiber Content	Tear Strength, Pounds — Dry — Warp	Tear Strength, Pounds — Dry — Filling	Tear Strength, Pounds — Wet — Warp	Tear Strength, Pounds — Wet — Filling	Tensile Strength, Pounds — Warp	Tensile Strength, Pounds — Filling
1	80/20 rayon/nylon	14.3	10.0	11.5	11.7	114	53
2	75/25 rayon/nylon warp 100% rayon filling	10.9	8.2	..	..	114	53
3	75/25 rayon/nylon warp 100% rayon filling	13.2	10.9	..	..	126	68
4	50/50 acetate/rayon	5.9	6.9	..	..	119	51
5	50/50 acetate/rayon	7.3	8.7	..	..	94	54
6	100% wool	5.2	5.2	..	..	37	47
7	50/50 rayon/Dacron	5.1	4.8	..	..	61	52
8	55/45 Dacron/wool	15.3	14.3	..	..	76	57
9	35/40/25 acetate/rayon/Dacron	5.5	6.4	..	..	60	40
10	55/45 Orlon/wool	6.7	6.1	4.7	4.1	45	36
11	acetate/rayon end and end—pick and pick	4.1	5.6	..	..	45	36
12	80/20 rayon/wool	9.8	9.8	6.9	6.0	106	79
13	50/25/25 rayon/acetate/Orlon	5.3	4.7	2.5	2.2	78	56
14	100% wool	5.0	5.3	3.8	3.6	43	44

TABLE VII
WASHFASTNESS OF COMMERCIAL FABRICS

Fabric No.	Fabric Description	#2 AATCC 120°F — Shade Change	#2 AATCC 120°F — Staining	#2 AATCC 120°F — Color in Bath	140°F* — Shade Change	140°F* — Staining	140°F* — Color in Bath
1	80/20 rayon-nylon grey	W4-5	none	none	W4	none	v sli
2	75/25 rayon-nylon tan	W4-5	v sli	v sli	W4	sli	sli
3	75/25 rayon-nylon grey	W4-5	sli	none	W4	mod	sli
4	50/50 acetate-rayon grey	W4	v sli	v sli	W3	sli yellow	sli
11	50/50 acetate-rayon navy blue	W4	heavy	heavy			
12	80/20 rayon-wool	W4-5	none	none	W4	mod	sli
13	50/25/25 rayon/acetate/Orlon grey	W3-4	mod	sli	W2-3	heavy	mod
15	100% rayon pink	W4-5	none	none	W4-5	none	none
18	100% Orlon-sand	W4-5	none	none	W4	v sli	none
	75/25 rayon-acetate brown	W4	heavy	heavy			

* Not Standard Washfastness Test

shrink-resistant treatment. The durability of the acetate/rayon end-and-end, pick-and-pick fabric (#11 of Table V) is very poor with respect to both mild and severe abrasion. Data from wear trials have also shown this fabric to have poor durability. It definitely represents a substandard quality with regard to wear resistance. Otherwise, the wear trials have shown this fabric to be satisfactory. However, the 50-50 acetate/rayon slack fabric (#4 of Table V) had sufficient wear resistance, though the flex abrasion was still on the low side. In this connection it must be pointed out that abrasion testing to complete destruction does not supply sufficient information to assess wear resistance. It may be noted in Table V that certain fabrics having very high levels of flex abrasion resistance (complete destruction) show poorer appearance after mild abrasion than other fabrics whose flex abrasion resistance is of a much lower order of magnitude. Accordingly, it seems necessary in developing fabrics of new constructions or those with new finishes or different fiber blends to test abrasion resistance at several levels of severity. For apparel wear the effect of abrasion and wear on appearance and the formation of pills or shine are as important as resistance to hole formation.

Only four of the fabrics shown in Table VII could be considered as passing the No. 2 AATCC Washfastness Test, and the 100%-rayon fabric dyed pink is the only one which will pass the No. 3 AATCC test. From Table VII it is apparent that a 100%-rayon fabric can be produced which will pass the No. 3 Washfastness Test. However, the data in this table indicate that optimum practices of careful selection of Cuprofix dyestuffs or the use of vat dyestuffs have not been utilized since these techniques will normally produce dyeings of unconditional washability. This may be due to economic factors rather than a lack of technical knowledge. None of the arbitrarily selected commercial acetate/rayon fabrics shown in Tables VII and VIII are satisfactory for staining or washdown at the level of the No. 2 AATCC Washfastness Test. Although unconditional washability in this type of fabric often calls for No. 3 AATCC washfastness, according to present standards, it has not yet been clearly established by comparison of laboratory and home and commercial laundering tests that the No. 3 laboratory wash test correlates with the results of repeated home or commercial laundering.

MINIMUM SAFE LEVEL OF PERFORMANCE CHARACTERISTICS

From a consideration of all the data shown in Table II through VIII and other unpublished test results, the approximate minimum levels of performance given in Table IX have been evolved. It must be understood that these levels have been reached by examination of a limited number of fabrics with test methods now at our disposal. Table IX lists the approximate minimum requirements for suitings, slacks fabrics and sport shirting. Only properties that are of primary importance for developing these fabrics were included in this estimate, and only those properties on which adequate data and sufficient

TABLE VIII
WASHFASTNESS OF COMMERCIALLY AVAILABLE SLACKS

Fabric Composition	*Color*	*Washfastness Level*
1) 100% rayon	grey	Slight staining on cotton and slight washdown from #3 AATCC Test (160°F)
2) acetate-rayon	grey	Noticeable washdown and staining from #2 AATCC Test (120°F)
3) acetate-rayon	light blue	Noticeable washdown and staining from #2 AATCC Test (120°F)
4) 100% rayon	navy	Considerable staining on cotton and rayon from #3 AATCC (160°F)
5) 100% rayon	tan	Passes #3 AATCC (160°F) for staining and washdown
6) acetate-rayon	tan	Considerable washdown and staining from #2 AATCC (120°F)
7) 100% rayon	brown	Slight washdown and noticeable red staining on cotton and viscose from #3 AATCC (160°F)
8) acetate-rayon	brown	Noticeable washdown and heavy staining from #2 AATCC (120°F)

TABLE IX
APPROXIMATE MINIMUM LEVELS OF PERFORMANCE FOR SUITING, SLACK, AND SPORT SHIRTING FABRICS

Test	*Suiting*	*Slack*	*Sport Shirting*
Resistance to glazing	good	good	good
Safe ironing temp. °F	356	356	356
Needle-hole fusion	none	none	none
Resistance to needle-hole retention	good	good	good
Dimensional change in laundering, %	...	2.5 max	2.5 max
Dimensional change in steam pressing, %	2.5	2.5 max	2.5 max
Crease-angle recovery at 65% RH, Degrees	140	130	120
Wrinkle performance	good	fair-good	fair
Tensile strength, lb			
Warp	40	50	40
Filling	35	40	30
Tear strength, lb			
Dry	5.0	5.0	4.0
Wet	3.0	3.0	3.0
Dry-flex-abrasion resistance, cycles			
Warp	200	200	150
Filling	150	150	100
Wet-flex-abrasion resistance, cycles			
Warp	100	100	100
Filling	75	75	75
Pilling	v sli	v sli	v sli
Change in appearance after mild abrasion, 3000 cycles	v sli	v sli	v sli
Colorfastness to Laundering (#3 AATCC Test)			
a) Washdown	...	Class 3	Class 3
b) Staining	...	Class 4	Class 4
Colorfastness to atmospheric fumes	Class 4	Class 4	Class 4
Colorfastness to light (40 hrs)	Class 5	Class 5	Class 5
Colorfastness to perspiration	Class 4	Class 4	Class 4
Colorfastness to crocking			
Dry and Wet	Class 4	Class 4	Class 4

(Refer to Appendix #1 for descriptions of tests and definition of qualitative ratings)

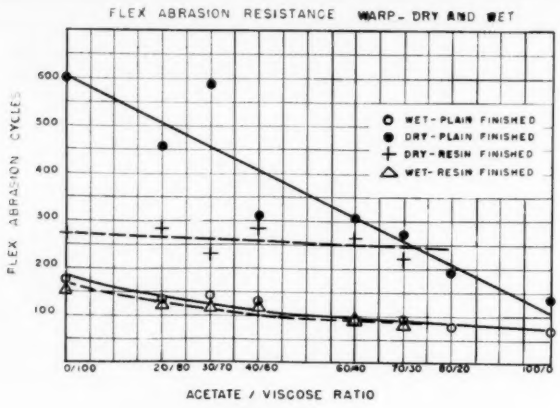

Figure 3

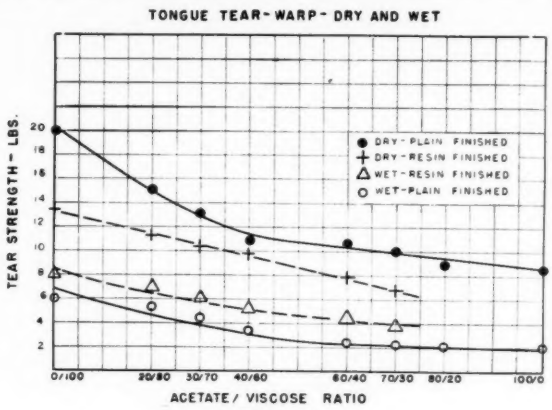

Figure 4

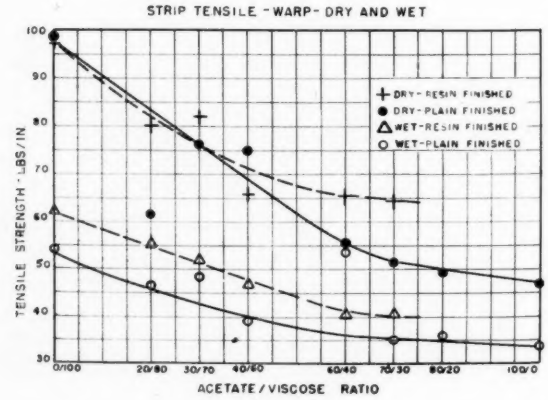

Figure 5

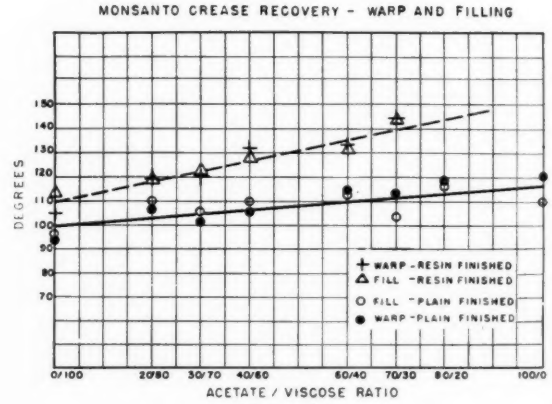

Figure 6

experience were available were used. Additional evaluation work will have to be done before estimates of minimum requirements can be made for other properties.

COMPARATIVE PHYSICAL CHARACTERISTICS OF ACETATE/RAYON BLENDS——In order to determine systematically the effect on performance of varying acetate/rayon blend ratios, a series of tropical suitings were prepared from various blends of 3 dpf, 2-inch staples of acetate, and viscose rayon, spun to 20/2 yarns (Twist 15Z x 14S). All fabrics were given a plain finish, and, in addition, portions of those containing 30% or more of rayon were given a urea-formaldehyde-silicone-resin finish. Table X gives the construction details, and the performance data are shown in Table XI and Figures 3-8. Although certain data are presented for the warp direction only, similar properties were noted in the filling direction in these cases.

Distinct trends as a function of blend ratio are noted in the majority of the performance characteristics of the plain finished fabrics. Increase in acetate content produces better resistance to needle-hole retention, crease recovery, wrinkle performance and resistance to laundering shrinkage, while reductions are noted in flex abrasion resistance, tear strength, tensile strength, safe ironing temperature, glazing resistance and resistance to steam-pressing shrinkage.

The combination resin finish not only stabilizes the fabrics with the higher rayon content but also improves wrinkle performance, crease recovery, and glazing at the higher acetate contents. Dry flex abrasion resistance is appreciably reduced by the finish at higher rayon contents, and in all cases the resin finish has had a severe effect on the mild-abrasion properties. These data confirm what has been known from commercial practice in that the resistance to wear of fabrics containing a high percentage of rayon is reduced by resin treatment. This also is demonstrated by the wear patterns obtained for cross-dyed resin-finished acetate/rayon combination fabrics. The photomacrograph shown in Figure 9 illustrates that in this end-and-end and pick-and-pick fabric the black-dyed rayon yarn wore out at least as rapidly as the white acetate yarn.

The best overall balance of physical performance appears to be achieved in the range of 50/50 to 70/30 acetate/rayon blends. The stabilization accomplished by resin finishing is a "must", although the durability under conditions of mild abrasion is not entirely satisfactory. Higher levels of resin application may be expected to improve further the dimensional stability at higher viscose contents with possible further sacrifice in durability, and therefore cannot be recommended. It is apparent that the warpwise laundering shrinkage is excessive in all these experimental fabrics, and, while perhaps not of major importance in a tropical suiting, it would most certainly be critical in slack and shirting fabrics. The degree of shrinkage found in the resin-finished fabrics is definitely abnormal and is a result of finishing without proper overfeed. The fact that the fabrics were not properly relaxed is demonstrated both by the texture of the greige and finished fabrics

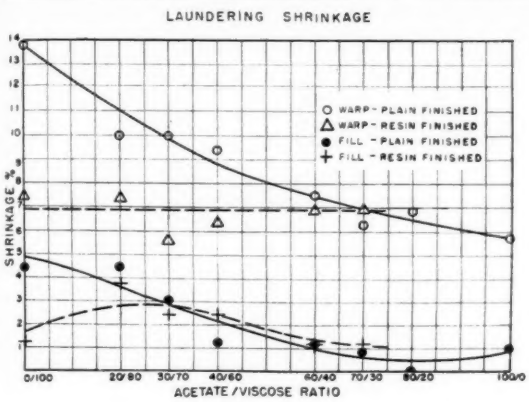

Figure 7

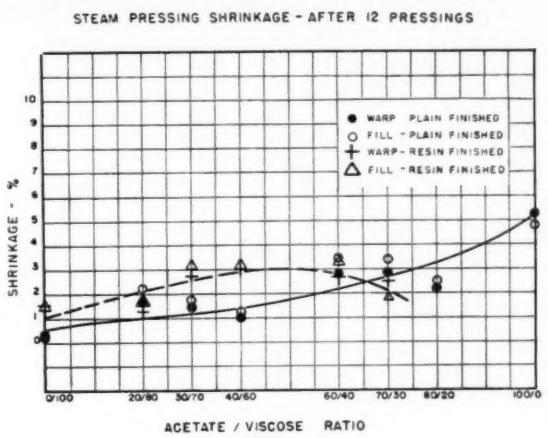

Figure 8

TABLE X

CONSTRUCTION DETAILS OF ACETATE/RAYON TROPICAL SUITINGS

Acetate/Rayon Ratio	*Yarn Size Warp and Filling*	*Thread Count**	*Crimp, % Warp and Filling*	*Wt oz/sq yd*	*Finish*
0/100	20/2x20/2	51x44	9.6x12.6	7.63	softener only
20/80	20/2x20/2	52x46	10.7x13.2	7.47	softener only
30/70	20/2x20/2	51x46	11.6x13.2	7.13	softener only
40/60	20/2x20/2	52x44	10.7x13.8	7.43	softener only
60/40	20/2x20/2	52x44	11.7x13.9	7.38	softener only
70/30	20/2x20/2	51x45	8.8x13.9	7.24	softener only
80/20	20/2x20/2	50x42	10.0x12.9	6.77	softener only
100/0	20/2x20/2	49x41	9.0x11.6	6.74	softener only
0/100	20/2x20/2	52x43	7.8x11.1	7.68	resin
20/80	20/2x20/2	52x46	6.8x 9.5	7.84	resin
30/70	20/2x20/2	51x46	9.5x12.6	7.49	resin
40/60	20/2x20/2	51x44	11.7x12.0	7.61	resin
60/40	20/2x20/2	52x45	9.9x13.0	7.63	resin
70/30	20/2x20/2	52x45	7.7x14.5	7.44	resin

Resin-finishing formulation ..... 11% UF resin
2% Silicone resin
1% Softener

*Greige Count 46x42
Total solids on fabric, approximately 10%

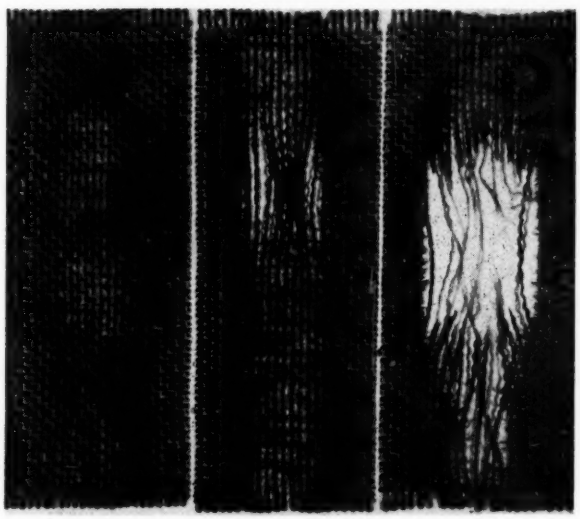

Figure 9
Relative rate of breakdown of acetate and viscose during abrasion (acetate/rayon suiting)

End and end, pick and pick construction, resin finished. Acetate———white, viscose———black.

TABLE XI

PERFORMANCE CHARACTERISTICS OF ACETATE/RAYON TROPICAL SUITINGS

Acetate/ Rayon Ratio	*Finish*	*Needle-Hole Fusion*	*Resistance to Needle-Hole Retention*	*Resistance to Glazing*	*Safe Ironing Temp °F*	*Wrinkle Performance*	*Effect of Mild Abrasion on Appearance*			
							Pilling		*Attrition*	
							Dry	*Wet*	*Dry*	*Wet*
0/100	plain	0	poor	good	446	very poor	none	sli	v sli	severe
20/80	plain	0	poor	good	410	very poor	none	mod	v sli	sli
30/70	plain	0	fair	fair-good	410	poor	none	none	v sli	extreme
40/60	plain	0	fair	fair-good	392	poor	none	none	none	extreme
60/40	plain	0	good	fair	374	fair	none	none	none	extreme
70/30	plain	0	good	poor-fair	392	fair	none	none	none	mod
80/20	plain	0	good	poor	374	fair	none	none	v sli	extreme
100/0	plain	0	good	poor	374	fair	none	none	mod	severe
0/100	resin	0	poor	very good	482	very poor	none	none	mod	severe
20/80	resin	0	poor	very good	374	poor	none	none	severe	extreme
30/70	resin	0	poor	good	374	poor	none	none	extreme	extreme
40/60	resin	0	poor	good	374	fair	none	none	extreme	mod
60/40	resin	0	good	good	374	fair-good	none	none	extreme	extreme
70/30	resin	0	good	good	374	good	none	none	extreme	sli

and by the change in crimp distribution produced by resin finishing. Correct dyehouse procedure should produce resin-finished fabrics with laundering shrinkages in the range of 1-3%. During the wet treatment and drying, provisions must be made to relax the latent tensions in the yarn and fabric structure. This is of importance not only in controlling the shrinkage, but also for improvement of wrinkle performance and wear resistance.

THE EFFECT OF THE ADMIXTURE OF NYLON ON THE PERFORMANCE OF ACETATE/RAYON BLENDS——— It has been noted above that a resin finish, especially when applied at higher levels, tends to reduce the wear resistance of rayon and acetate/rayon-blended fabrics. To overcome this deficiency the admixture of a reinforcing fiber has been used commercially. Relatively small amounts of nylon staple will improve the flex abrasion resistance considerably, and actual use also has indicated that the wear resistance may be improved by the addition of nylon. The yarn and fabric strength is only slightly increased by the addition of from 10% to 25% nylon. However, this increase may be sufficient to improve the processing characteristics in weaving and finishing and permit the spinning of a slightly increased yarn number, which is desirable from the designer's point of view. Since the inclusion of nylon in acetate/rayon blends results in increased fiber costs and may complicate processing and dyeing procedures, such three-fiber blends will only be of continued interest if they represent a marked improvement in performance.

In Tables XII through XV are presented data which indicate the effect of 15% and 20% nylon on the more important performance characteristics of fabrics consisting of about equal amounts of acetate and rayon. Fabrics A and B were dyed in union shades, and Fabric B was finished with a special resin for the purpose of improving washfastness and mechanical-performance characteristics. Fabric D containing Celaperm* staple was overdyed to a union shade to give unconditional washfastness. Fabrics E and F also contain Celaperm. The concentration of the resin used for the finishing of Fabrics B, D, and F, is indicated in Table XII, along with the construction details of this series of three-fiber blends.

Data on the performance characteristics of these fabrics are shown in Tables XIII, XIV and XV, and it will be noted that the finished fabrics meet or closely approach the performance levels previously established.

The data clearly indicate that the addition of nylon significantly improves the resistance to severe wear as tested by flex abrasion. Less pronounced is the effect on the resistance to mild abrasion, as may be noted by comparing the data in Table XV with those shown in Table V. The pilling and resistance to attrition evaluated by the tests obviously are more affected by the finishing treatment than by the addition of nylon. The other characteristics listed in these tables, such as sewability, glazing resistance, and dimensional stability, do not appear to be significantly changed by the addition of nylon. However, the finishing treatment again has markedly improved these characteristics. The crease angle recovery and wrinkle performance of all the fabrics are relatively poor. Additional improvement may be achieved by increasing the resin content, since the addition of nylon and the special finishing treatment secure enough durability so that a small sacrifice in abrasion resistance, resulting from a higher resin concentration, may be acceptable.

ACETATE/WOOL BLENDS FOR SUITINGS———Worsted suitings have long been accepted as a standard of quality in the suiting field, largely because of their well-balanced performance characteristics, in particular, appearance, hand, drape, good elasticity, and wrinkle performance, as well as good over-all wear resistance and retention of aesthetic appeal over a long period of time. During the last five years manufactured fibers have gained wide acceptance for women's suitings as well as for summer-weight men's suitings. To a large extent, economic factors were responsible for this trend, since the over-all performance of many of these blended fabrics, although accepted by most consumers, did not, in general, compare favorably with those of similar all-wool fabrics, particularly with regard to hand, wrinkle performance, thermal behavior, wicking, and the retention of these properties after repeated dry cleanings. While the levels of performance of most of the commercial fabrics discussed above may be sufficient for slack and shirting applications, they are not adequate for suitings, especially with regard to hand, drape, wrinkle performance, and crease recovery. To overcome these de-

* Trade name for Celanese acetate yarn and staple color pigmented by dope inclusion.

TABLE XII

CONSTRUCTION DETAILS OF ACETATE/RAYON/NYLON BLENDS

Code	Blend Acetate/Rayon/Nylon	End Use	Weave	Weight oz/sq yd	Thread Count	Yarn Size	Crimp %	Finish
A	45/40/15	shirting	2/1 twill	6.29	100X56	20/1	17.8X7.8	unfinished
B	45/40/15	shirting	2/1 twill	6.82	100X56	20/1	8.9X5.9	resin (#1)
C*	40/40/20	shirting	2/1 twill	6.21	105X60	20/1	15.8X7.0	unfinished
D*	40/40/20	shirting	2/1 twill	6.14	103X58	20/1	11.8X5.6	resin (#2)
E*	40/40/20	slack	2/1 twill	8.07	97X53	14/1	17.3X5.3	unfinished
F*	40/40/20	slack	2/1 twill	8.90	97X52	14/1	17.0X5.8	resin (#2)

* Celaperm used in this blend.

Resin #1

4% alkylated urea formaldehyde
4.5% urea-formaldehyde
1% stearyl resin
(expressed as solids on fabric)

Resin #2

5% urea-formaldehyde
1.5% stearyl resin
1% melamine-formaldehyde
(expressed as solids on fabric)

TABLE XIII

SEWABILITY AND THERMAL PROPERTIES OF ACETATE/RAYON/NYLON BLENDS

Code	Blend Acetate/Rayon/Nylon	Sewability: Needle-Hole Fusion	Sewability: Resistance to Needle-Hole Retention	Thermal Behavior: Resistance to Glazing	Thermal Behavior: Safe Ironing Temp, °F
A	45/40/15 unfinished	0	fair-good	poor	356
B	45/40/15 resin (#1)	0	good	good	374
C	*40/40/20 unfinished	0	fair	fair	374
D	*40/40/20 resin (#2)	0	good	good	374
E	*40/40/20 unfinished	10%	fair	poor-fair	374
F	*40/20/20 resin (#2)	17%	fair	fair-good	374

* Celaperm

TABLE XVII

SEWABILITY, AND THERMAL PROPERTIES OF ACETATE/WOOL BLENDED FABRICS

Code	Blend	Sewability: Needle-Hole Fusion	Sewability: Resistance to Needle-Hole Retention	Thermal Behavior: Resistance to Glazing	Thermal Behavior: Safe Ironing Temp °F
AA)	80/20 acetate/wool	none	good	poor to mod	356
BB)	70/30 acetate/wool	none	good	mod	356
CC)	50/50 acetate/wool	none	excellent	good	374
DD)	50/50 acetate/wool	none	excellent	good	374
14)	100% wool	none	excellent	good	...

TABLE XIV

DIMENSIONAL STABILITY OF ACETATE/RAYON/NYLON BLENDS

Code	Blend Acetate/Rayon/Nylon	Laundering Shrink. at 160°F, %: Warp	Laundering Shrink. at 160°F, %: Filling	Steam Press Shrink, %: Warp	Steam Press Shrink, %: Filling	Crease Recov Degrees: Warp	Crease Recov Degrees: Filling	Wrinkle Performance
A	45/40/15 unfinished	1.5	0	1.4	1.3	94	123	poor
B	45/40/15 resin (#1)	0	0	0	1.1	123	128	fair
C	*40/40/20 unfinished	0.7	+2.9	0.5	1.1	117	114	poor
D	*40/40/20 resin (#2)	+0.7	+0.7	0.6	1.1	117	130	poor-fair
E	*40/40/20 unfinished	7.2	+1.4	2.1	0.8	116	126	poor
F	*40/40/20 resin (#2)	0.7	+2.2	1.0	1.4	122	130	poor-fair

* Celaperm

TABLE XV

DURABILITY OF ACETATE/RAYON/NYLON BLENDS

Code	Blend Acetate/Rayon/Nylon	Flex Abrasion, Cycles: Dry Warp	Flex Abrasion, Cycles: Dry Filling	Flex Abrasion, Cycles: Wet Warp	Flex Abrasion, Cycles: Wet Filling	Effect of Mild Abrasion on Appearance: Pilling Dry	Pilling Wet	Attrition Dry	Attrition Wet
A	45/40/15 unfinished	355	450	719	239	mod	mod	mod	mod
B	45/40/15 resin (#1)	1594	698	725	128	v sli	sli	v sli	sli-mod
C	*40/40/20 unfinished	641	978	1408	492	mod	mod	v sli	sli
D	*40/40/20 resin (#2)	992	349	819	184	none	v sli	none	v sli
E	*40/40/20 unfinished	694		1020		mod	mod	none	sli
F	*40/40/20 resin (#2)	818	773	2558	528	none	none	none	v sli

* Celaperm

TABLE XVI

CONSTRUCTION DETAILS OF ACETATE/WOOL BLENDED FABRICS

Code	Blend	Weave	Weight	Thread Count	Yarn Size	Crimp %	Thickness mils	Air Permeability ft³/min/ft²
AA)	80% 3 dpf 2" acetate 20% 64's wool	plain	7.7	50x44	20/2	12.9x17.2	20	32
BB)	40% 3 dpf 2" acetate 30% 5.5 dpf 2" acetate 30% 64's wool	plain	7.5	51x45	20/2	10.5x12.7	18	43
CC)	50% acetate 50% wool	2/1 /twill	7.1	68x42	12/1	10.4x11.7	21	87
DD)	50% acetate 50% wool	2/1 /twill	8.0	86x36	12/1	19.9x 3.8	23	30
14)	100% 64's wool	2/2 /twill	7.95	70x68	24/2	8.5x15.6	..	27

ficiencies, blends of wool with man-made fibers (especially of the newer synthetic types) recently have been produced commercially. It is now anticipated that this trend may be expanded into the men's regular-weight-suiting field, which offers an additional area for the utilization of manufactured fibers. The use of the less expensive acetate and rayon staples is of particular interest if it can be demonstrated that fabrics using these fibers will meet consumer desires.

Construction details of suiting fabrics prepared from various acetate/wool blends are shown in Table XVI. The yarns for the 80/20 and 70/30 acetate/wool blends were prepared on the cotton system from 64's wool top cut to 2". The yarns for the 50/50 blends were prepared on the American system.

These fabrics were dyed by procedures reported in the 1953 Intersectional Contest Paper presented by the New York Section of the AATCC, which demonstrate that practical procedures are available for dyeing such blends in a satisfactory range of shades with adequate fastness characteristics. No finishing treatment other than decatizing has been employed. Performance data are given in Tables XVII, XVIII, and XIX with data on a commercial worsted fabric (#14 of Table II) restated for convenience.

The 50/50 acetate/wool fabrics are comparable with 100% wool suitings in terms of the various subjective aspects of hand and drape, such as softness, pliability, resilience, and character of surface. At the higher acetate contents, the typical worsted hand is somewhat lacking, but the fabrics retain subjective properties desirable for suitings. A good over-all balance of performance is attained in the 50/50 blend (DD), the properties comparing favorably with those of 100% wool in all respects with the exception of fillingwise tear strength, which is somewhat low as a result of the unbalanced construction.

Slacks prepared from the 80/20 blend, compared in wear trials with commercial all-synthetic fabrics over a period of one year, have shown superior all-around performance and have been considered very satisfactory by the wear testers.

Insufficient glazing resistance and somewhat excessive steam pressing shrinkage (although the latter could be reduced by sponging)are shortcomings of the 80/20 and 70/30 acetate/wool blends.

While these limited data are not sufficient to characterize fully the performance of acetate/wool fabrics, they serve to indicate the potential utility of such blends.

THE IMPROVEMENT OF THE WASHFASTNESS OF ACETATE/RAYON BLENDS———In Tables VII and VIII a number of commercially available slack and shirting fabrics have been evaluated for color washfastness. Few of these, including the acetate/rayon blended fa' rics are satisfactorily fast to the #2

TABLE XVIII
DIMENSIONAL STABILITY OF ACETATE/WOOL BLENDED FABRICS

Code	Blend	* Steam Pressing Shrinkage, %		Crease Recovery Degrees		Wrinkle Performances
		Warp	Filling	Warp	Filling	
AA)	80/20 acetate/wool	4.4	2.9	132	128	good
BB)	70/30 acetate/wool	3.7	4.6	127	128	good
CC)	50/50 acetate/wool	3.1	1.8	147	135	good to excellent
DD)	50/50 acetate/wool	2.6	0.9	146	149	good to excellent
14)	100% wool	1.8	1.8	157	145	good to excellent

* Determined before sponging.

TABLE XIX
DURABILITY PROPERTIES OF ACETATE/WOOL BLENDED FABRICS

Code	Blend	Flex Abrasion-cycles				Effect of Mild Abrasion on Appearance			Tear Strength lb		Tensile Strength lb	
		Dry		Wet		Pilling	Attrition					
		Warp	Filling	Warp	Filling		Dry	Wet	Warp	Filling	Warp	Filling
AA)	80/20 acetate/wool	223	206	73	79	none	none	severe	4.5	4.7	52	42
BB)	70/30 acetate/wool	403	368	223	228	none	none	severe	5.1	5.1	52	41
CC)	50/50 acetate/wool	562	728	229	74	mod	none	mod	6.4	3.8	47	29
DD)	50/50 acetate/wool	253	290	314	109	none	none	sli	5.1	3.8	57	33
14)	100% wool	846	892	290	236	none	sli	severe	5.0	5.3	43	44

TABLE XX
STANDARD DISPERSED ACETATE DYESTUFFS CLASSIFIED FOR RELATIVE WASHFASTNESS PERFORMANCE

Class	Dyestuff	Dyeability	Maximum Washfastness
A	Eastman Blue GLF	slow, high temperatures	#2 AATCC (120°F) with minimum washdown and staining
A	Celliton Blue GLF	slow, high temperatures	#2 AATCC (120°F) with minimum washdown and staining
A	Interchem Blue GLF-40	slow, high temperatures	#2 AATCC (120°F) with minimum washdown and staining
A	Celliton Fast Blue Green BA	moderate slow at 160°F	shows slight washdown and staining from #2 Test
A	Celliton Blue AF	moderate slow at 160°F	shows slight washdown and staining from #2 Test
A	Celanthrene Violet BGF	moderate slow at 160°F	shows slight washdown and staining from #2 Test
A	Amacel Red 2B	moderate slow at 160°F	shows slight washdown and staining from #2 Test
A	Artisil Red 5RB	moderate slow at 160°F	shows slight washdown and staining from #2 Test
A	Amacel Red Y	moderate slow at 160°F	shows slight washdown and staining from #2 Test
A	Amacel Rubine IX	moderate slow at 160°F	shows slight washdown and staining from #2 Test
A	Amacel Yellow CW	moderate slow at 160°F	shows slight washdown and staining from #2 Test
A	Interchem Yellow HDLF-40	moderate slow at 160°F	shows slight washdown and staining from #2 Test
A	Eastman Yellow 2RGLF	moderate slow at 160°F	moderate washdown and staining from #2 Test

AATCC (120°F) Wash Test with respect to shade change, staining and coloration of wash liquor. This may be explained by the fact that the most frequently used commercial disperse (acetate) dyestuffs will not pass the #1 AATCC (105°F) Wash Test for either washdown or staining. There are, however, a number of acetate dyestuffs available which may be characterized as Class A for washfastness. These are slow-diffusing and high-temperature dyeing and therefore wash off at a slower rate than the low-temperature fast-diffusing dyestuffs normally used.

By a careful selection of these Class A dyestuffs, a partial list of which appears in Table XX, it is possible to achieve blue shades that will be satisfactory to the #2 AATCC Test and mixed shades that will pass the #1 AATCC Test. This is more clearly understood from an examination of the data in Table XXI, in which the rate of color washdown as a function of temperature is described.

The level of colorfastness performance obtained by the use of these dyestuffs is adequate for many apparel applications. However, there are increased consumer demands for slacks and shirting fabrics giving satisfactory washability under home and commercial laundering conditions. For such fabrics, a higher degree of washfastness is necessary.

The principles of dyestuff fixation on cotton, rayon and wool have been well established, so that it was of interest to investigate this phenomenon for acetate dyestuffs. It is impossible to discuss in detail within the framework of this paper the complex dyestuff fixation reactions. However, an outline of the fixation approach and preliminary results are being presented to indicate the level of improvement which may be expected. A complete discussion of the mechanisms involved, and the levels of performance which can be achieved, will be presented in a forthcoming paper.

The fixation of acetate dyestuffs requires the presence of amino and hydroxyl groups, which can be chelated with cupric ion, and aliphatic hydroxyl groups, which can be reacted with urea-formaldehyde type resins. However, on acetate the fixation agents must be able to penetrate throughout the individual fiber cross sections to react with the dyestuff molecules. Typical urea-formaldehyde resins which effectively penetrate rayon were found not to penetrate acetate to a sufficient degree to achieve satisfactory dyestuff fixation.

In Table XXII a number of acetate dyestuffs are listed which respond to cupric-ion and/or resin fixation. In Table XXIII the general structures of modified urea-formaldehyde resins and their relative effectiveness for penetration and fixation are listed.

In applying these fixation treatments, it was found that a number of dyestuffs which do not pass the #1 AATCC Test for washdown and staining can easily be made to pass this level of washfastness. Several dyestuffs, particularly Eastman Blue GLF and Interchemical Blue BGLF, can be raised from the #2 AATCC washfastness level to approximately the #3 AATCC level.

These principles have been applied to the dyeing of 50/50 acetate/rayon fabrics, and the washfastness results are recorded in Table XXIV. All four critical shades were satisfactorily fast to the #2 AATCC Wash Test, and, in addition, these fabrics

TABLE XXI

COMPARATIVE COLOR WASHDOWN AS A FUNCTION OF TEMPERATURES

Dyestuff	*Class*	*% Color Loss at 105°F*	*120°F*	*140°F*	*160°F*
Celliton Blue AF	A	4.5	8.0	13.5	22.0
Amacel Red 2B	A	5.0	6.5	15.0	20.0
Amacel Red Y	A	5.0	8.5	10.5	22.5
Amacel Rubine IX	A	5.5	9.5	15.5	24.5
Amacel Red VII	C	16.5	30.5	48.0	54.0

TABLE XXII

EFFECT OF CUPRIC ION AND REACTIVE RESINS ON WASHFASTNESS PROPERTIES OF SELECTED COMMERCIAL DISPERSED ACETATE DYESTUFFS

Dyestuff	*Chelatable Group*	*Resin Fixable Group*	*Cupric Ion*	*Reactive Resin*	*Improvement in Washfastness*
Celliton Blue Green BA	2-OH	2-ROH	+	+	from #1+ to better than #2 Washfastness Test
Eastman Blue GLF	2-OH	1-ROH	+	+	from #2 to #3 washfastness
Interchem Blue B (Pr 228)	none	none	—	—	remains at #1 washfastness test, no improvement
Eastman Blue GLT	4-NH_2	?	+	+	original does not pass #1 washfastness. Combination treatment almost passes #2 test.
Interchem Yellow HGLF-40	none	none	—	—	no improvement
Amacel Orange BL (Pr 230)	none	2-ROH	—	+	marked improvement with resin only will pass #2 test
Amacel Red 2B	none	2-ROH	—	+	marked improvement with resin only. Will pass #2 test.
Amacel Red 6X	none	1-ROH	—	+	original does not pass #1 test. Resin results in significant improvement.
Amacel Yellow GLF	none	none	—	—	no improvement
Amacel Yellow CW	none	none	—	—	no improvement
Amacel Red Y	none	2-ROH	—	+	significant improvement
Eastone Red GLF	none	1-ROH	—	+	moderate improvement with resin
Celliton Pink BA (Pr 235)	1-NH_2	?	+	+	original very poor to #1 test. Cupric ion changes shade; resin improves washfastness.
	1-OH	marked shade change			

TABLE XXIII

INFLUENCE OF REACTIVE RESIN STRUCTURES ON FIXATION OF DYESTUFFS AND INSOLUBILIZATION OF 100% CELLULOSE ACETATE FABRIC

Resin Structure	*Fixation of Dyestuffs Containing ROH*	*% Solubility of 100% Acetate*
1. No resin, original 100% acetate		100
2. Low ratio formaldehyde to urea-monomer 3% resin on fabric	slight improvement in washdown and staining	30-40
3. High ratio formaldehyde to urea-monomer 3% resin on fabric	moderate improvement in washdown and staining	10-15
4. Methylated high ratio formaldehyde to urea-dimer 3% resin on fabric	moderate improvement in washdown and staining	20-30
5. High ratio of formaldehyde to alkylated urea-monomer 3% resin on fabric	moderate to excellent improvement in washdown and staining	<5

TABLE XXIV

WASHFASTNESS LEVELS ACHIEVED IN PLANT TRIALS WITH SELECTED DYES AND FIXATION TREATMENTS

50/50 Acetate-Rayon	#2 AATCC Test 120°F			#3 AATCC Test 160°F			Drycleaning Perchloroethylene & Mahogany Soap			Home Launderability 5 Successive Machine Washes at 130°F
	Shade Change	Staining	Bath Coloration	Shade Change	Staining	Bath Coloration	Shade	Stain	Bath	
Navy Blue										
1) no fixation	W-2	mod heavy	mod heavy				4-5	none	sli color	marked wash down (W-2); marked staining
2) copper-resin fixation	W4-5	sli	sli	W3-4	sli-mod	sli-mod	5	none	none	slight loss of yellow and red (W3-4); slight staining of acetate and rayon
Tan										
1) no fixation	W2-3	mod heavy	mod heavy				4-5	none	v sli	marked wash down in shade (W1-2); marked staining on rayon and acetate
2) copper-resin fixation	W-4	v sli	sli	W3+	sli-mod	sli	5	none	none	slight loss of yellow and red (W3-4)
Green										
1) no fixation	W-3	mod	mod				5	none	none	marked wash down in shade (W-2); moderate staining on acetate and rayon
2) copper-resin fixation	W4-5	v sli	v sli	W3-4	sli	sli	5	none	none	very slight wash down in shade (W-4); negligible staining
Brown										
1) no fixation	W2-3	mod heavy	mod heavy				4-5	none	sli color	marked wash down in shade (W1-2); loss of yellow component
2) copper-resin fixation	W-4	v sli	sli	W-3	sli-mod	mod	5	none	sli color	slight reddening of shade (W-3); due to loss of yellow

Note: All comparisons made on International Grey Scale

TABLE XXV

EFFECT OF FINISHING ON PROPERTIES OF 100% ACETATE AND 50-50 ACETATE/RAYON

100% ACETATE SUITING

Resin Type	% on Fabric	Pierce Cantilever Stiffness W	F	Dry Tongue Tear lb W	F	Flex Abrasion Dry W	F	Flex Abrasion Wet W	F	Sewability Needle Hole Fusion %	Needle Hole Retention As is	Steam Press	Laundering Shrinkage % at 160°F Warp	Filling	Monsanto Wrinkle Recovery Degrees W	F	Spray Rating after #2 Wash
1) original unfinished		3.4	3.3	3.7	3.5	76	62	48	46	96	poor	poor	—1.3	—1.3	104	97	0
2) low-formaldehyde-to-urea resin	3	3.2	3.2	3.0	3.0	53	48	37	28	96	poor	poor	—4.6	0.0	116	97	0
3) low-formaldehyde-to-urea resin stearyl resin	3 1.5	3.6	3.1	5.4	5.9	102	85	58	54	87	poor	poor-fair	—3.3	+ .7	112	107	90
4) high-formaldehyde-to-urea resin	3.0	3.2	2.5	2.9	2.7	52	52	52	46	96	poor	poor	—2.0	+ .7	101	100	0
5) high-formaldehyde-to-urea resin stearyl resin	3.0 1.5	4.1	3.1	9.5	8.9	225	333	80	56	0	poor-fair	good	—2.6	+1.3	127	129	90-100
6) methylated high-formaldehyde-to-urea resin	3.0	2.5	3.0	3.2	2.9	50	50	70	57	96	poor	poor	—2.0	+ .7	126	115	0
7) methylated high-formaldehyde-to-urea resin stearyl resin	3.0 1.5	3.0	2.7	7.5	8.3	172	197	67	74	0	poor-fair	fair-good	—2.6	+ .7	133	130	90-100
8) high-formaldehyde-to-alkylated-urea resin	3.0	4.0	3.3	3.2	3.5	49	57	39	30	40	poor	poor-fair	—2.6	+ .7	110	102	0
9) high-formaldehyde-to-alkylated-urea resin stearyl resin	3.0 1.5	5.3	3.8	6.8	7.0	135	119	56	52	0	poor	fair	—1.9	0.0	120	118	90-100

50/50 ACETATE/RAYON

1) original unfinished		2.8	2.2	4.3	4.2	286	139	94	84	0	poor	fair-good	—3.8	+1.0	112	107	0
2) methylated high-formaldehyde-to-urea resin	10	3.1	2.9	5.9	6.8	154	165	127	108	0	fair	good	—2.2	+1.0	121	118	0
3) methylated high-formaldehyde-to-urea resin	10	2.8	2.6	8.4	8.5	99	175	106	90	0	poor-fair	fair-good	—3.6	+1.0	108	113	80
stearyl resin	1.5																
4) low-formaldehyde-to-urea resin and methylated high-formaldehyde-to-urea resin	7 4	2.9	2.6	4.2	4.3	122	131	117	92	0	fair	fair-good	—2.9	+0.5	92	101	0
5) Low-formaldehyde-to-urea resin and methylated high-formaldehyde-to-urea resin stearyl resin	7 4 1.5	2.6	2.9	7.6	8.0	180	252	195	163	0	fair	good	—2.2	+1.1	87	96	80

gave good performance in repeated washing in an automatic home laundering machine at 130°F.

THE IMPROVEMENT OF THE PERFORMANCE CHARACTERISTICS OF ACETATE/RAYON BLENDS BY RESIN TREATMENTS———In finishing acetate blends containing rayon, urea-formaldehyde or melamine-formaldehyde resins have to be used to improve hand, dimensional stability, and wrinkle resistance. Not all of the commercially available resins used on rayon will react with equal effectiveness with acetate, as has been described above in discussing the improvement of colorfastness by means of formaldehyde-resin fixation (Table XXIII).

The physical characteristics of a series of 100%-acetate and of 50/50 acetate/rayon suiting fabrics of comparable construction, to which a number of selected finishing treatments have been applied, are listed in Table XXV. Approximately 3% of resin was applied to the 100%-acetate fabric, since, in a padding treatment of a 50/50 acetate/rayon blend with 10 or 11% of resin, approximately this amount will go onto the acetate portion, while the larger part reacts with the rayon.

It is of interest to note that all of these resin treatments did not appreciably reduce the tear and flex-abrasion resistance of the acetate fabric and that the combination of urea-formaldehyde and melamine-formaldehyde resins with a modified reactive resin containing a stearyl group markedly increases tear strength and abrasion resistance of the acetate as well as the 50/50 acetate/rayon fabric. In addition, this type of resin finish improves sewability by decreasing needle-hole fusion and needle-hole retention and, as is known, imparts water repellency and resistance to aqueous-borne stains. These improvements are durable to repeated launderings and dry cleanings.

The foregoing data, in addition to those discussed earlier in this report, clearly indicate the possibility of improving important performance characteristics of acetate blends, including wear resistance, by the application of a proper finishing treatment.

SUMMARY

While the data presented in this paper have been limited largely to acetate blends for sport shirting, slacks and casual wear, and light-weight suitings, the techniques discussed are applicable on a much broader basis. In particular, the philosophy of balancing properties related to functional requirements may be applied to all the major end uses of textile materials. The data presented on the minimum safe levels of performance may serve as a guide to the textile technologist, and, it is hoped, may stimulate others to use a similar approach in the development of blended fabrics for additional end uses.

Acetate has been used for many years to contribute desirable hand, drape, and appearance to fabrics and to enhance styling effects. The data which have been presented show that acetate staple in blends properly constructed, dyed, and finished will also provide fabrics having good over-all performance at a reasonable price.

These data have been offered as stimulating information rather than as a final answer to the problem of the best utilization of acetate in blended fabrics. Experimentation on a broader scale is now required for establishing practical and profitable production procedures. The textile industry as well as the manufacturer of dyestuffs and textile chemicals will find a fruitful field in continuing this development work.

DISCUSSION

Question: Where did you obtain the specifications for the home laundering of acetate fabrics?

Answer: They are more or less our own. Actually, we wash in a commercial-type home laundry machine at 130°F (with the incoming water at this temperature), washing five successive times with a very light steam pressing between each successive washing.

Q: How should fabrics of rayon-acetate blends be stabilized?

A: The wet treatment and drying of materials containing acetate must be carried out with great care so that strains are not imposed on the fabric. Some improvement in dimensional stability can be attained by the use of resins, which penetrate the acetate portion, particularly alkylated urea-formaldehyde types containing a high proportion of formaldehyde.

APPENDIX #1

TEST METHODS IN EVALUATION OF PERFORMANCE CHARACTERISTICS

WEIGHT, THREAD COUNT, TENSILE STRENGTH (STRIP), TEAR STRENGTH (TONGUE)———ASTM D-39-49 (except that Instron tensile tester was used for strength determinations).

PERCENT CRIMP———Federal Specification CCCT-191b Method 4110.

NEEDLE-HOLE FUSION———Sew four thicknesses of fabric at 4000 stitches/min, and 16 stitches/inch. After sewing for a distance of 15 inches remove the thread from the last 3.0 inches and determine the percentage of fused needle holes within this distance on the top layer of the fabric.

NEEDLE-HOLE RETENTION———Sew three thicknesses of fabric at 4000 stitches/min and 16 stitches/inch. After sewing for a distance of 15 inches, remove the thread from the last 3.0 inches and examine the center layer by reflected light both before and after steam pressing. Rate the resistance to needle-hole retention as "poor," "fair," or "excellent," depending on the size of hole retained.

GLAZING RESISTANCE———Accordion-fold a 12″ x 4″ strip of fabric to give four 2″ x 4″ layers with a 6″ tail composed of a single layer. Steam-press the sample for 15 seconds under normal mechanical press pressure. Using a second sample, lay a piece of shim brass over a part of the folded portion and steam-press for 15 seconds at high mechanical-press pressure. Rate the samples from poor to excellent for difference in appearance between the folded and unfolded portions and for increased luster under the brass shim. A similar test may be carried out with an iron. Fabrics dyed in dark shades will show glazing more readily.

MAXIMUM SAFE IRONING TEMPERATURE———Determine, by means of a thermocouple, the temperature of a 2″ x 2″ area on the sole plate of an iron whose total weight is 5 lb. (The temperature of the iron should be controlled by a Variac with the iron thermostat set on "maximum"). Place a 2″ x 2″ specimen of fabric on a padded surface and place the iron on the fabric, using a template to insure coincidence of the specimen with the 2″ x 2″ area on the sole

plate. Do not apply any hand pressure. After 10 seconds lift the iron straight up and examine the fabric. If no damage has occurred, raise the temperature 10°C (18°F) and repeat with a new sample. Continue in 10°C increments until the fabric shows evidence of damage, such as sticking, distortion, stiffening, or color change. Report the safe ironing temperature as the temperature 10°C (18°F) lower than that at which the first change occurred.

LAUNDERING SHRINKAGE———Determine the change in dimensions of an 18-inch square laid out on a 24" x 24" piece of fabric after washing for 45 minutes in an agitator type washing machine, where the initial water temperature is 160°F, with sufficient chip soap to give a running suds. Rinse in water at 100°F and air-dry.

STEAM-PRESSING SHRINKAGE ——— Determine the change in dimensions of an 8-inch square laid out on a 10" x 10" piece of fabric after twelve consecutive 10-second pressings in a Hoffman press, steaming from the buck only with 70 psi steam, and using normal mechanical press pressure.

CREASE RECOVERY——AATCC Method 66-52.

WRINKLE PERFORMANCE ——— Celanese Wrinkle Tester. Nine-inch squares of fabric formed into vertical cylinders are alternately crushed axially, and allowed to "hang out," for a period of one hour. After this wrinkling treatment the test specimens are mounted in a specially lighted viewing box and are ranked by a panel of five viewers. Standard fabrics classed as having "good," "fair," and "poor" wrinkle performance are included, and the test specimens are rated against these standards.

FLEX ABRASION———Federal Specification CCC-T-191b, Method 5300, except that the test is conducted with a bar load of 4 lb and a head load of 1 lb. For wet determinations the fabric is thoroughly wet out before testing.

MILD ABRASION———Conducted similarly to flex abrasion, except that the flex bar is covered with a piece of the fabric under test. The appearance of the fabric is rated for pilling and attrition after 3000 cycles. A lb bar load and a 1½-lb head load is used.

COLORFASTNESS TO LAUNDERING ——— AATCC Method 36-52 with the addition of a test at 140°F.

COLORFASTNESS TO ATMOSPHERIC FUMES——— AATCC Method 23-52.

COLORFASTNESS TO LIGHT ——— AATCC Method 16A-52.

COLORFASTNESS TO PERSPIRATION ——— AATCC Method 15-52.

COLORFASTNESS TO CROCKING———AATCC Method 31-52.

SPRAY RATING———AATCC Method 22-52.

APPENDIX #2

CONDITIONS OF LAUNDER-OMETER WASH TESTS

Test	Soap Concentration	Sodium Carbonate	Temperature °F	Temperature °C	Time (minutes)
AATCC #1	.5%		105	40	30
AATCC #2	.5%		120	49	30
AATCC #3*	.5%	.2%	160	70	45

* 10 steel balls.

APPENDIX #3

CHEMICAL SPECIALTIES USED

1. *Resins for fixation studies*
   - Aerotex Cream 450 (Cyanamid)
   - Aerotex Resin 801 (Cyanamid)
   - Aerotex Resin 802 (Cyanamid)
   - Aerotex Resin M-3 (Cyanamid)
   - Permel Resin (Cyanamid)
   - Catalyst UTX (Cyanamid)
   - Resin EN (Sandoz)
   - Resloom M-75 (Monsanto)
   - Santaloom (Monsanto)
   - Catalyst AC (Monsanto)
   - Rhonite R-1 (Rohm & Haas)
   - Rhonite R-2 (Rohm & Haas)
   - Rhonite QR-348 (Rohm & Haas)
   - Rhonite 610 (Rohm & Haas)
   - Catalyst G-8 (Rohm & Haas)
2. *Copper Fixatives Used*
   - Apexet (Apex)
   - G-67 (Geigy)
   - Cuprofix 52 (Sandoz)
   - Cuprofix 47 (Sandoz)
   - Ahcofix S (Arnold Hoffman)

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(Concluded from Page P849)

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Method

AATCC

Method

TESTS

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